

# THE DOCK & HARBOUR AUTHORITY

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## Editorial.

### *The Port of Takoradi.*

The Port of Takoradi which is situated on the Gold Coast in the Gulf of Guinea, was officially opened on Tuesday, 3rd April, 1928, by Mr. J. H. Thomas and has, since that date, amply proved the necessity for its construction.

Previously there had been no harbour for a distance of 1,200 miles from Freetown in Sierra Leone to Lagos in Nigeria, and transshipment in this area had previously been carried out by means of surf boats and canoes which, of course, was a slow means of transport and also dangerous and costly.

It was decided in the year 1919 to construct a deep water port, and after careful investigation, Takoradi was decided upon as the most advantageous spot.

The harbour is composed of two breakwaters which are 2,500-ft. apart. The South or Main breakwater has a total length of approximately 1½ miles, whilst the North or Lee breakwater has a length of 4,500-ft., and the area of water which these two breakwaters enclose is roughly 220 acres. The Lee breakwater is provided with rail and road facilities and has four wharves with a total length of 1,000-ft.

In the last financial year, 704 vessels called at Takoradi with a gross tonnage of 3,309,155 and 304,000 tons of cargo were handled whilst 9,000 passengers embarked and disembarked.

Improvements at the Port of Takoradi are still being undertaken, the chief of which, at present, is the deepening of the harbour.

The Port of Takoradi forms the subject of this month's supplement and an illustrated article appears on another page.

### *New Graving Dock to be built at Southampton.*

The Southern Railway Company have decided to build a new graving dock at Southampton for the purpose of accommodating the new vessel which is being built for the Cunard Steamship Company.

This new graving dock, when completed, will be 1,200-ft. long, 135-ft. wide at the entrance and will have a depth of 45-ft., and will be the largest in the world.

It was at first contemplated by the Southern Railway Company to have an extension built on the present floating dock for the purpose of accommodating this new boat, but this apparently has been dropped now in favour of a new graving dock, the work on which will be begun very shortly. It is expected to be ready for use in 1933.

### *Port of Ipswich.*

Since 1923 the Ipswich Dock Commission have put in hand and completed various schemes for the improvement and extension of the facilities of the port of Ipswich, including 1,020-ft. of reinforced concrete quays in the docks and 1,200-ft. of deep water tidal quay, also in reinforced concrete, in the river Orwell, equipped with cranes and the necessary rail and road approaches. They have levelled a large area of land behind the new quays, a good deal of which has been taken up on lease by industrial firms. The dredging of the river Orwell to a depth that will allow any ship capable of entering Harwich Harbour to come up to the new tidal quay and lie afloat at all states of the tide has proceeded steadily and will probably be completed before the end of 1931. It is hoped that these extensions and improvements will prove sufficient to cope with any normal expansion of trade that may be expected for some years to come.

The Commission have not, however, until recently felt justified in incurring the considerable and quite unremunerative expense of lighting the channel of the river, and until November of this year vessels arriving at Harwich Harbour or wishing to depart from Ipswich towards nightfall have (with the exception of some of the local barges) been compelled to wait until next day. This has on occasion undoubtedly caused delay and consequently loss to shipowners, and it has for some years been the intention of the Commission to provide lighted buoys as soon as they

considered that the state of their finances would allow them to do so. That time has now arrived, and orders were placed for the necessary buoys early in the present year, the buoys being delivered in October and placed in position early in November. From the 10th of that month vessels have been able to come up to Ipswich or leave the town during the dark hours.

The buoys are eleven in number and are lighted with dissolved acetylene gas, the cylinders being so arranged that they will function for twelve months consecutively without any attention. Each light has its own characteristic, the flashes varying from .25 to 1 second in length, and the intervals from 2½ to 10 seconds. Starting from Harwich Harbour, there are seven buoys flashing white with conical day mark, painted red, on the starboard hand, and four flashing red, with can day mark, painted black, on the port hand.

### *Mersey Docks and Harbour Board.*

The annual report of the Mersey Docks and Harbour Board was presented at a meeting held on November 27th, and the accounts for the year showed that under the heading of Revenue Account, the rates received on vessels had amounted to £1,397,568, being an increase of £17,918 over the previous year, and, owing to the decrease in the rates and dues on goods of £96,965, the total income from rates and dues on ships and goods showed a net decrease of £79,047. This decrease was chiefly incurred through a reduction of 5 per cent. being made in the foreign dock tonnage rates.

An interesting fact regarding the number of vessels paying dock tonnage rates and harbour rates was that the number for the past year was 20,771, whereas when the Board was constituted in 1858, the figure was 21,352; but the tonnage in that year was 4,441,943 as against 21,314,820 for the past year, and which is nearly five times as much.

There was a surplus on the year's working of £267,338 and £100,000 of this amount has been set aside to the sinking fund; £11,880 to fire and marine insurance account, £81,421 to renewals and depreciation, and the balance of £74,037 has been carried to the unappropriated receipts account.

### *Development of Ayr Harbour.*

In connection with the development of Ayr Harbour—in accordance with the terms of the Ayr Harbour Transfer Act of 1919—an expenditure of over £50,000 is to be undertaken by the London, Midland and Scottish Railway Company, and it is to be noted that in compliance with their application under this Act the railway company have already spent between £3,000 and £4,000. The new work now sanctioned includes the replacement of existing cranes with modern appliances of greater efficiency and increased capacity; while, for the shipment of coal, electrical belt conveyors (with tippers, capstans and weighing machines capable of dealing with twenty-ton waggons) are to be provided. There will be one fixed conveyor at the river berth, and one fixed and one travelling conveyor at the tidal dock. Provision will also be made for additional siding accommodation to the extent of 479 waggons, while additional loop lines will be constructed to facilitate working of the traffic of the harbour.

### *Spain to Erect Five New Lighthouses.*

The Spanish Government has decided to provide five new lighthouses and four smaller light-stations for the better guidance of ships along the Spanish Moroccan coastline and several British firms are understood to be making bids for the contracts.

The lighthouses are to be of the automatic type, switching on at sunset and off at sunrise by means of a sensitive valve. The illuminant is to be acetylene gas and each lighthouse must have a plant capable of producing a three months' supply without attendance.

Bengal Harbour Notes.

Calcutta's Foreign Trade.

THE import trade of Calcutta with foreign countries in September compared very favourably with the previous month's account, the value going down from Rs.4.51 crores to Rs.3.39 crores. Exports, however, showed an appreciable improvement, the value rising from Rs.7.01 crores to Rs.8.44 crores. Compared with the corresponding period of last year, both suffered a severe set-back, imports dropping by Rs.2.97 crores and exports by Rs.4.85 crores. The variations in the value of the principal imports as compared with the figures for September, 1929, are shown below by a plus or minus sign prefixed:—

	In Lakhs of Rupees.
Cotton Goods ... ..	64 (—1.35)
Machinery and Millwork ... ..	38 (—8)
Sugar ... ..	40 (—12)
Iron and Steel ... ..	21 (—21)
Other Metals ... ..	10 (—9)
Betelnuts ... ..	11 (—3)
Oil, Minerals ... ..	9 (—28)
Instruments, Electrical ... ..	8 (level)
Hardware ... ..	8 (—6)

All the principal commodities of imports fell in value as a result of the general slump in trade. Cotton goods suffered most. The yardage of piece goods contracted from 70 million yards to 21 million yards and the value fell from Rs.1.71 crores to Rs.42 lakhs. Imports from the United Kingdom were 15 million yards and from Japan 6 million yards, as compared with 50 million yards and 18 million yards respectively during the corresponding period of last year. The quantity of refined sugar receded from 32,000 tons to 31,000 tons, and the value from 51 lakhs of rupees to Rs.35 lakhs. Iron and steel recorded a big drop, the value falling from Rs.42 lakhs to Rs.21 lakhs. The heavy fall under mineral oils was mainly due to the fact that there were no importations of kerosene during the period under review. Hardware also declined considerably. Liquors dropped from Rs.8.51 lakhs to Rs.4.37 lakhs in value, and tobacco from Rs.4.74 lakhs to Rs.1.16 lakhs. The fluctuations in the values of the principal exports as compared with the figures for September, 1929, are indicated below:—

	In Lakhs of Rupees.
Jute Manufactures ... ..	3.87 (—88)
Tea ... ..	2.20 (—71)
Jute, Raw ... ..	74 (—2.11)
Hides and Skins ... ..	32 (—16)
Lac ... ..	20 (—35)
Linseed ... ..	20 (—32)
Iron, Pig ... ..	16 (—4)
Grain, Pulse and Flour ... ..	14 (—13)

All the principal commodities on the export side declined in value. Jute showed a very poor record and suffered from the prevailing low prices. The United States took most of the gunny cloth, skins and lac, and Germany most of the raw jute and hides. Pig-iron, which was mostly taken by the United States, fetched poor prices. Tea and linseed were shipped largely to the United Kingdom and rice to Ceylon.

Piecegoods Imported through Calcutta Port.

From January until the end of August this year imports of all styles of piece goods through the port of Calcutta have gone down by some 22,000 packages. Great Britain and Italy appear to have suffered most in this connection, imports from the former having dropped from 164,227 to 121,887 packages, while in regard to the latter the fall has been from 10,692 to 5,600. Imports from Japan have increased from 112,000 to 131,000 packages. Included in this latter figure, however, is approximately 31,000 packages of hoisery, and it is worthy of note that for this period 8,800 packages of grey yarn have arrived from China against 4,100 from Japan. Imports from Indian ports have increased from 52,274 to 75,758 packages, and there has been an increase in the month of August alone from 9,020 to 12,643 packages. In August alone imports from Great Britain have decreased from 23,799 packages last year to 11,666 this year, while those from Japan have decreased from 21,227 to 8,657.

General.

The municipal fresh water vessel "Lalla Rookh" was badly damaged and her serang injured as the result of a collision with the Port Commissioner's steam vessel "Pansy" in the first week of last month in the river Hooghly. The "Lalla Rookh" was supplying drinking water to the "Sir Frederick Dumayne," the Port Commissioner's vessel, when the "Pansy," which was proceeding down the river, came into collision with her. The "Lala Rookh" was struck on her port bow and was badly damaged. As she was taking in water fast the serang ordered all pumps to work, and on getting the vessel light he made at full speed for Salimar, on the opposite side of the river, where he beached the vessel.

The Bengal Chamber of Commerce have received advice from the Commerce Department of the Government of Bengal to the effect that Mr. R. T. Young, who is succeeding Mr. R. Grew as Canadian Trade Commissioner at Calcutta, would arrive here shortly.

According to returns received in the Department of Commercial Intelligence and Statistics, the total exports of raw jute from Calcutta during September amounted to 203,924 bales of 400 lbs. each. Of this amount 198,178 bales were exported from Calcutta and 5,746 from Chittagong.

The Port of Montreal: Programme of Improvements Adopted.

ACCORDING to a statement by Mr. Joseph H. Rainville, the new Chairman of the Montreal Harbour Commission, a programme of port improvements costing about £400,000 is to be put into effect along the Montreal waterfront during the next six months. Construction will be carried on during the winter in order that the new facilities may be available with the opening of the 1931 season of navigation.

King Edward Pier Reconstruction.

The most important of the works authorised is the reconstruction of the downstream side of King Edward pier at the foot of the St. Lawrence boulevard, involving an expenditure of about £300,000. Adequate provision is to be made to accommodate vessels with a draught of 35-ft., in anticipation of the completion four years hence of the 35-ft. ship channel from Montreal to the Atlantic Ocean.

Warehouse Extensions.

The Harbour Commissioners have also decided to construct a new two-storey shed on King Edward pier, comprising a 240-ft. extension to Shed No. 9 on the upstream side of the pier. It will be complete with grain conveyor galleries, and two 20,000-ton liners will be enabled to berth alongside the pier and be provided with all necessary facilities for discharging and taking on cargoes.

Work has already been begun on the construction of a new industrial wharf for the British-American Oil Company, and the wharf for the McColl-Frontenac Oil Company is to be extended to three times its present length. A further extension to the new coal dock built last year is to be undertaken immediately, and about £32,000 is to be spent during the winter on port maintenance and repairs. Other important improvements

now in progress include the reconstruction of Laurier Pier. A new high-level wharf is being built around the old low-level one and work is continuing along other high-level shore wharves.

St. Lawrence River Channel.

According to information recently published by Major N. B. McLean, chief engineer of the River St. Lawrence Ship Channel, the 35-ft. waterway for ocean liners from the Atlantic to Montreal is likely to be completed in four years' time. The St. Lawrence River is being improved so that liners even larger than 20,000 tons gross will be able to penetrate inland 1,000 miles to Montreal with reasonable safety.

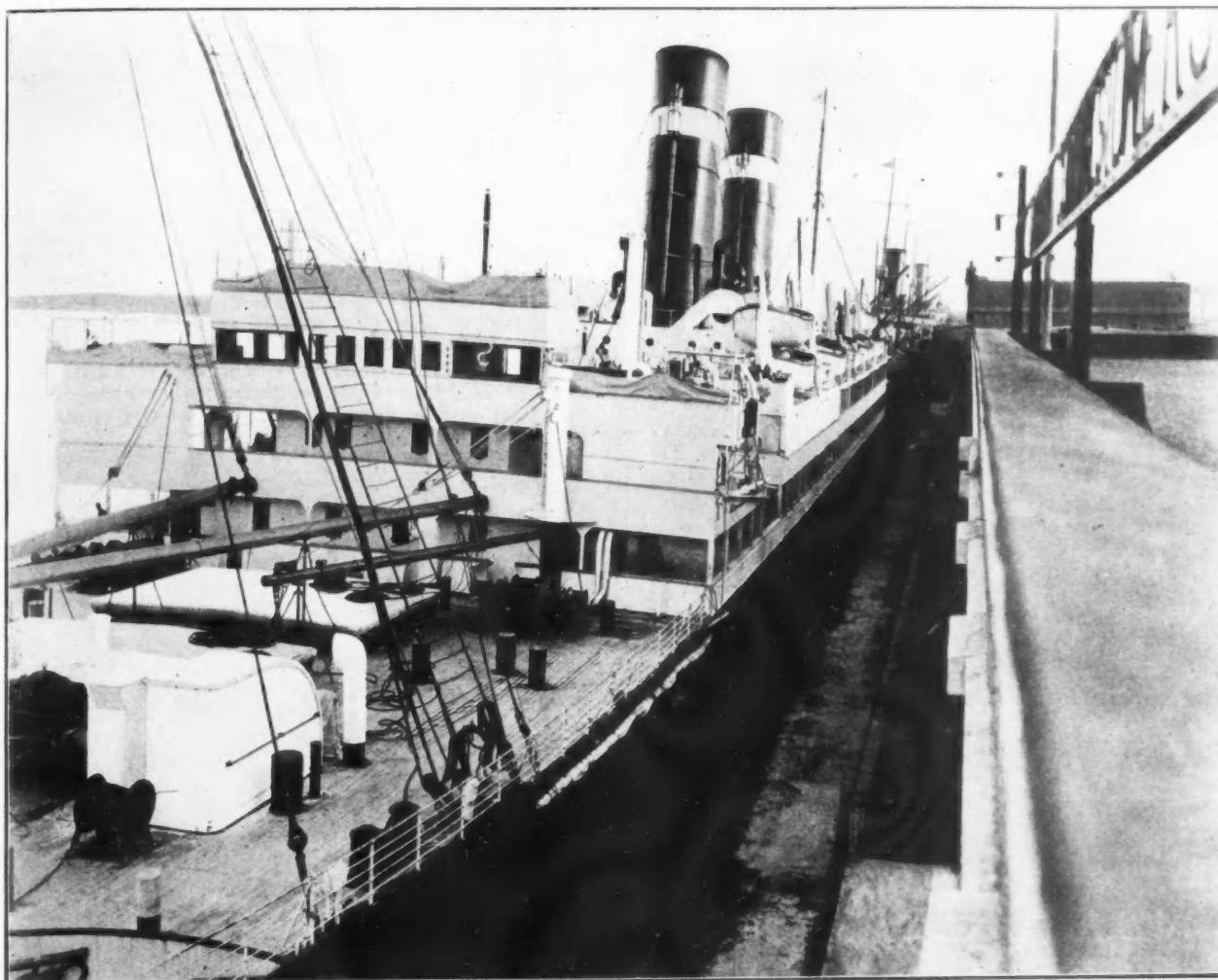
Rapid Dredging Progress.

Dredging is now proceeding rapidly, and the deepening of the river to 35-ft. clearance may be finished by December, 1933, if no unforeseen obstructions are encountered. Completion before the end of 1934 is confidently anticipated. A width of 500-ft. in the straight stretches and 1,000-ft. in the curves is being provided, and to secure the requisite depth for the St. Lawrence traffic expected in the future about 8,000,000 cubic yards of earth and rock remained at the beginning of 1930 to be removed. One-half of this is being dredged away by the equipment of the Marine Department and the balance by General Dredging Contractors, Ltd.

Eleven dredges are now at work in the channel between Montreal and Quebec, and eight more are expected to be in operation next year on this 160-mile stretch of waterway. Two new dredges are being built for the Marine Department and four or five for the contractors. The concentration of 19 dredges next year between Montreal and Quebec is expected to make an appreciable difference in the channel before the end of 1931. In addition, two dredges are at present at work in the north channel to the east of Ile d'Orleans below Quebec.

## Port of Halifax.

By Colonel E. C. Phinney, President, Halifax Harbour Commissioners.



*S.S. Westernland (16,610 tons) at Berth 20; Ascania (14,013 tons) at Berth 21; California (16,792 tons) at Berth 22; Halifax, Feb. 15th, 1930.*

**H**ISTORICALLY one of the oldest ports in North America, Halifax, to-day, may aptly be described as a virtually new port in its facilities and service.

Within the last few years extensive additions have been made to its piers and transit sheds, and it is now, in fact, the chief Canadian Atlantic port in volume of shipping and accommodation for deep-sea vessels.

The history of the Port of Halifax dates back to the founding of the city in 1749 by Lord Cornwallis. It immediately became the chief naval station of Britain's possessions in eastern North America, and in 1758 an armada of 157 British vessels sailed out of the harbour to take part in the attack on the French fortress at Louisburg, 250 miles eastward along the Atlantic coast.

Halifax's geographic situation, at times, has been a marked advantage, but in the three or four decades following Confederation, in 1867, the port's distance from the seat of the new nation's industry, agriculture and commerce in Upper Canada proved to be an adverse factor, and the port did not grow in importance proportionate to the progress of other parts of the Dominion.

Towards the end of the last century, however, a very definite sentiment had grown up favouring the development of Halifax as a national port, in view of the fact that its harbour was the only one continuously open on the Atlantic coast, and deep enough and large enough to accommodate all classes of shipping. In a word, it was recognised that Halifax possessed the only harbour through which Canada could establish an always dependable trade-route on the Atlantic.

This sentiment finally found expression in legislation providing for a national transcontinental railway to facilitate the passage of Canadian imports and exports through Canadian ports. The railway, which has cost approximately \$300,000,000, was opened in 1913, and almost simultaneously, the Government of that day launched the Halifax Ocean Terminal development scheme.

This project, designed to create a 2,000-ft. bulkhead pier to berth three ships, and six piers, each to berth four large vessels, was put under way in 1913. The world war, however, interrupted the progress of the work, which remained practically at a standstill until in 1928, when the port was placed under the jurisdiction of a Harbour Commission appointed by the Dominion Government, in pursuance of the recommendations made by Sir Andrew Rae Duncan, of England, in his Report on complaints emanating from the Maritime Provinces in regard to certain disabilities and disadvantages ensuing from Confederation.

The first Harbour Commissioners were: Messrs. Peter R. Jack (president); John Murphy and C. W. Ackhurst, who held office until September last, when they were succeeded by Col. E. C. Phinney (president), and Messrs. J. L. Hetherington and F. P. Merchant.

Under the first Harbour Commission, three transit sheds on the quay were completed and the total equipment of the port was brought up to 16 deep water berths, with transit sheds at 14 berths. At present, another pier 1,250-ft. long and 260-ft. wide is under construction. It will support four modern fire-proof transit sheds and will cost something less than \$5,000,000. It is expected to be ready for use in 1931.

Also under construction at present is a small coal pier for the exclusive use of the Dominion Coal Company. This will cost half a million dollars, and will be completed in 1931, when another transit shed will be erected on the site of the Coal Company's present plant.

The Halifax Harbour Commissioners contemplate the completion of the original Ocean Terminals project. This programme will call for the construction of three more piers, each of which will be equipped to accommodate four large ocean vessels. The period, however, at which this work will be carried on, remains to be determined, but it is expected that the project will be completed within the next five or six years.



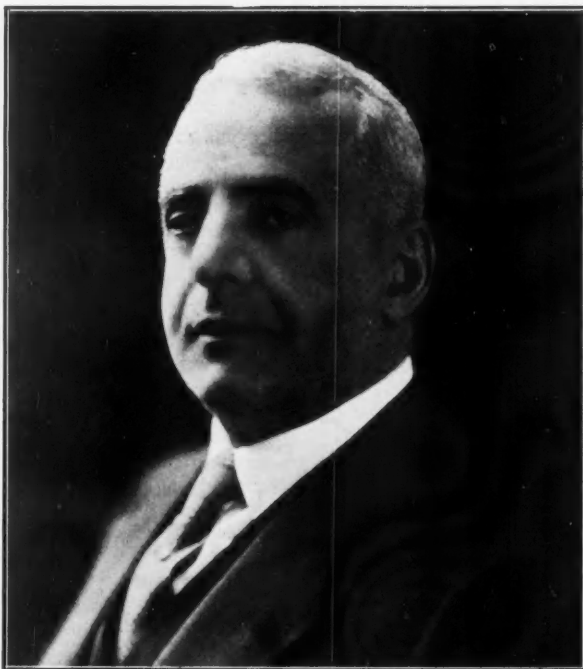
### The Port of Halifax—continued.

The Halifax Harbour Commissioners' properties are in three sections, called "Richmond," "Deepwater," and "Ocean Terminals." These sections, in the order named, represent the order of progress made towards port development before appointment of the Commissioners by the Canadian National Railways and their predecessors, the Canadian Government Railways and the old Inter-Colonial Railway.



Col. E. C. Phinney, President, Halifax Harbour Commissioners, Halifax, Canada.

Sheds 20, 21, 22 and 27, at Ocean Terminals, and at Pier 2, Deepwater, are of concrete and steel throughout, as the four sheds on Pier "B" will be. All other sheds are of frame timber, and all have concrete floors. Sheds 21 and 22, and at Pier 2, are two storeys, the others being one storey. Upper storey of Pier 2 shed is fitted up for frost-proof storage, with floor area of 138,000 square feet. Escalators are used between floors, for transferring goods.



J. L. Hetherington, Harbour Commissioner, Halifax, Canada.

Existing sheds of the Commission contain 820,000 square feet of storage area, and completion of sheds on Pier "B" will give total storage area of more than 1,000,000 square feet.

Wide doorways connect the three sheds on the 2,007-ft. quay, making them for freight handling purposes practically one building, with a continuous concrete floor, 1,911-ft. long, 95-ft. wide. Shed 23, at right angles, is directly connected

with shed 22, extending the storage area under one roof to a total of approximately 210,000 square feet.

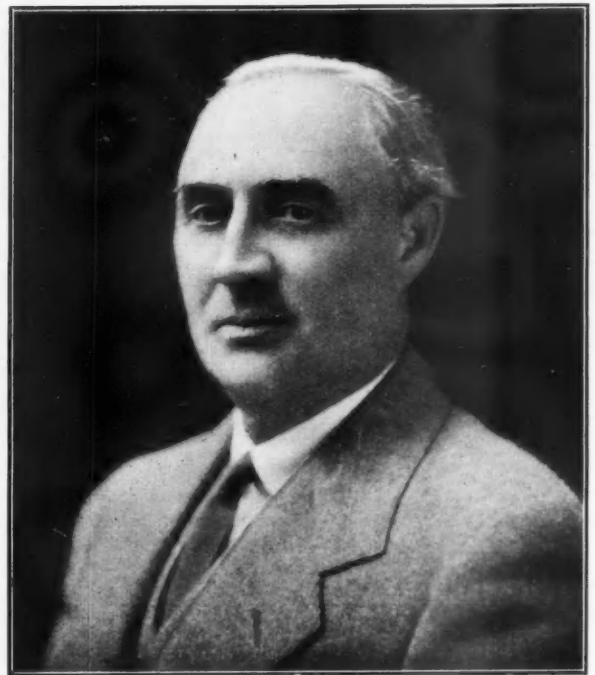
The Harbour Commissioners' properties are served by sixteen miles of railway sidings, with storage capacity of 7,000 cars, and facilities for switching more than 300 cars a day.

The Commissioners' Administration building, with Customs and Postal facilities, adjoins the transit shed at Berth 20.

With the shipment of more than 6,000,000 bushels of export grain through Halifax in 1929, the port has assumed a position of definite importance in the grain-carrying trade of the world, and contemplated developments hold the promise of a great expansion of this phase of port activities.

The completion, in December, 1929, of a 1,100,000 bushel addition to the Ocean Terminals elevator, gives a total storage capacity of 2,200,000 bushels. An automatic car dumper unloads six cars of 2,000 to 2,500 bushels each an hour, and two track pits, with power shovels, unload five cars an hour. Grain is automatically weighed as received and discharged.

Vessel-loading facilities consist of six conveyor belts, running in galleries to Berths 21, 22, 23, 24 and 25, each belt carrying grain at the rate of 12,000 to 15,000 bushels an hour. Maximum loading combinations permit delivery of a total of 72,000 to 90,000 bushels an hour to three or four vessels, with 24,000 to 30,000 bushels an hour to each of three vessels.



F. P. Merchant, Harbour Commissioner, Halifax, Canada.

Grain-loading can be carried on conveniently, while general cargo is being loaded or discharged, and sheds 21 and 22 are equipped with travelling dockspout towers, for special use in rounding out liner cargoes.

Grain-loading facilities at the Port of Halifax have met the test of experience, and steamers with capacities up to 500,000 bushels, have been loaded within the past year, at the rate of 25,000 bushels an hour. There is assurance that this figure will steadily be improved on as the Harbour Commissioners' officials and employees, as well as the stevedores employed in this line of work, all co-operate as they have plainly shown every desire to do, in maintaining the tradition established here nearly a century ago by Samuel Cunard, founder of the famous steamship line that bears his name, of making Halifax known throughout the world as a port of quick dispatch.

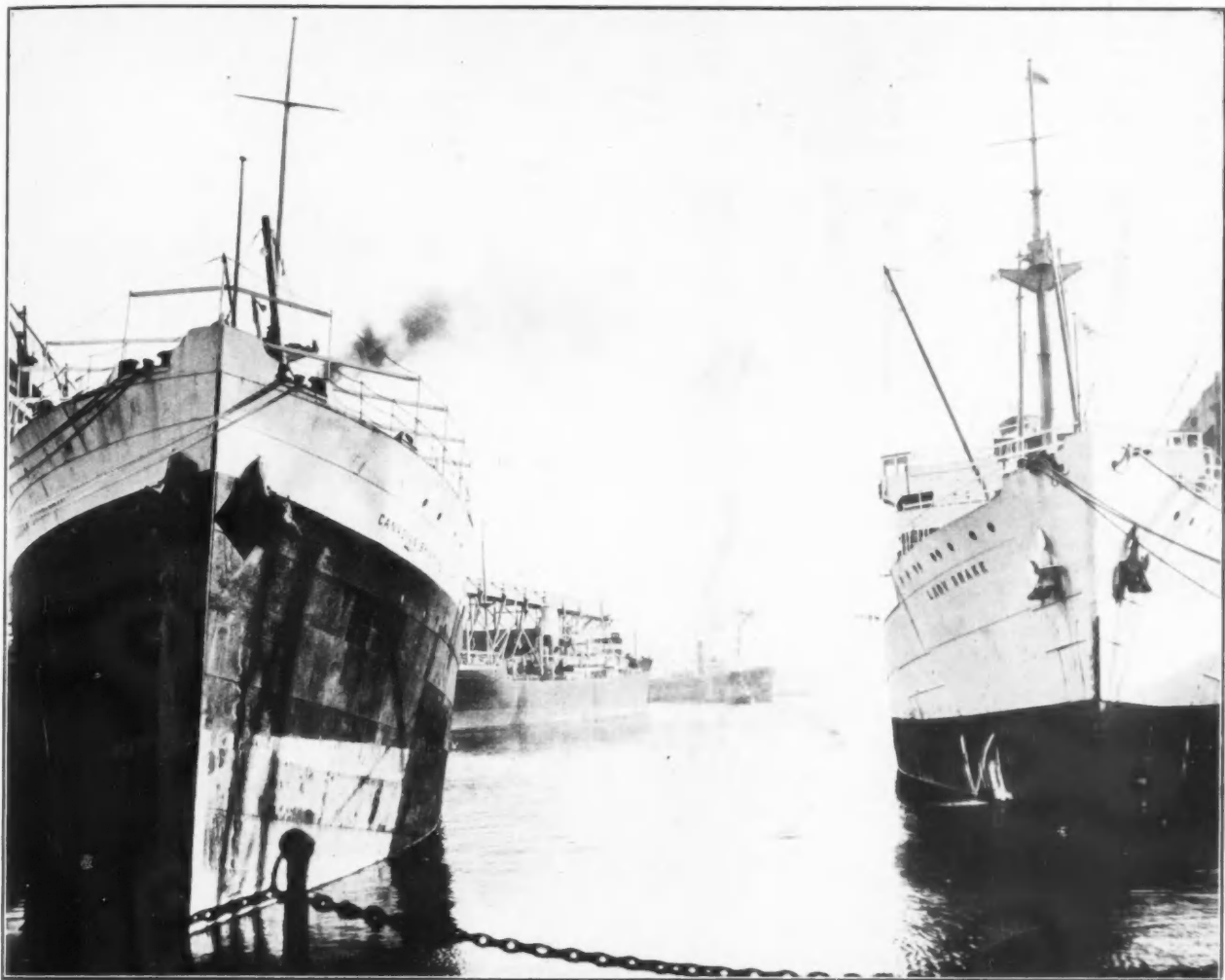
Arrangements for the health, comfort and convenience of ocean travellers passing through the Port of Halifax are rated as the finest on the North American Atlantic seaboard. In a new building, with the most modern equipment, are the Immigration and Customs quarters, through which travellers pass with the minimum of delay.

Every part of the building is thoroughly ventilated, lighted and heated. Sanitary arrangements are of the most modern type, and ample medical attention is available.

Travellers have frequently commented on the comfort and convenience of existing facilities. The Immigration quarters are directly connected by a covered ramp with the Canadian National Railways' palatial hotel, the "Nova Scotian," which was opened in July last, thus permitting travellers to pass to and fro between ocean liners' cabins and hotel rooms or railway sleeping and parlour cars, without going out of doors.



The Port of Halifax—continued.



Four Vessels of Canadian National Steamships Line at Halifax, Canada. The "Lady Drake" is one of five vessels specially built for the Canada-West Indies service, as provided for in the Trade Treaty of 1925.

One of the most comfortable Sailors' Homes in Canada is maintained at Halifax by the Navy League of Canada. The League's building is at the corner of Barrington and South Streets, but a stone's throw from the docks at the Halifax Ocean Terminals. Whether he can pay or not, a seaman can always get food and lodging at the Sailors' Home, where regular accommodation is available for 80 men. Some 50 extra beds can be provided in emergencies. The Home is in charge of Mr. W. A. Morgan, Secretary of the Halifax Branch of the Navy League of Canada.

Halifax is the only port on the Atlantic seaboard of Canada that is always open to all shipping. Its natural advantages and facilities promote rapid handling of freight (including grain) and passengers, and quick despatch of ships. Port charges are as low as those at any other North Atlantic port, and in some instances markedly lower. Nowhere else on the North Atlantic are total port costs lower for shipowners, charterers or shippers, and the average of such costs, at competing ports, is appreciably higher than the Halifax total.

The favourable position of the Port of Halifax rests, primarily, on a combination of natural advantages not found at any other Western Atlantic port. The harbour itself is unrivalled. Ten square miles in area, its depth accommodates the largest ships in the world, and at the quay and other Ocean Terminals berths the water at low tide is deeper than is required by any ship now afloat or planned. Maximum tide variation is six feet, and this negligible factor, and the virtual absence of current, render navigation so easy that the world's largest ships may easily berth under their own power, although ample tugboat service is available.

The harbour, landlocked and fully sheltered, is open to shipping every day of the year, being entirely free of ice, and has a wide entrance, with deep, straight channel leading directly from the open sea, which is only thirty minutes' steaming distance away. The port is only sixty miles off the regular path of ocean traffic between Europe and North America, and complete aids to navigation obviate any difficulty in sailing safely into the harbour at any hour of the day or night. No other North Atlantic port has less fog than has Halifax, and in some others much more fog is encountered.

The Halifax Harbour Commissioners enumerate the following outstanding advantages of the port:—

- Minimum sailing distance from North America to all European ports.
- Nearness to ocean path between European and United States ports.
- Accessibility of harbour to all shipping, at all times.
- Safety and roominess of harbour.
- Absence of navigating difficulties.
- No costly or inconvenient tidal variations.
- Berthing accommodations for all classes of vessels.
- Facilities for handling all kinds of cargoes, including grain.
- Ample safe covered storage areas, and railway services.
- Expedition handling of cargo and quick despatch of ships.
- Ample coal and oil bunkering facilities.
- Facilities for drydocking, repairing and overhauling ocean vessels.
- Modern cold storage service.
- Unequalled accommodations for passenger traffic.
- Provision for care of visiting sailors.
- Low port charges.

Steamship Lines using the port:—

- |                                 |                                      |
|---------------------------------|--------------------------------------|
| Anchor Line.                    | Holland-America Line.                |
| Anchor-Donaldson Line.          | Holt (Blue Funnel Line).             |
| Atlantic Transport Line.        | Italia America Line.                 |
| Baltic-America Line.            | Lamport and Holt.                    |
| Bank Line.                      | Leyland Line.                        |
| Booth Line.                     | Lloyd Sabaudo.                       |
| Canada Steamships.              | Mancheater Line.                     |
| Canadian National Steamships.   | Newfoundland Canada Steamships, Ltd. |
| Canadian Pacific Steamships.    | New Zealand Shipping Co.             |
| Clyde Steamship Co.             | North German Lloyd.                  |
| Commonwealth Dominion (Cunard). | Norwegian-America Line.              |
| County Line.                    | Ocean Dominion S.S. Corporation.     |
| Cunard Line.                    | Pickford and Black Line.             |
| Donaldson Line.                 | Red Star Line.                       |
| Elder Dempster Co.              | Roosevelt Steamship Co.              |
| Ellerman Bucknell Line.         | Scandinavian-American Line.          |
| Farquhar Steamships.            | Shaw Savill & Albion Steamships.     |
| Federal S.N. Company.           | Swedish-American Line.               |
| Furness Lines.                  | United Fruit Company.                |
| Furness Red Cross Line.         | United States Line.                  |
| Furness Bermuda Line.           | United States Shipping Board.        |
| French Line.                    | Weir Line.                           |
| Hamburg-American Line.          | White Star Line.                     |

Bombay Port Trust.

Before proceeding with the regular business of the Board meeting held on October 23rd, 1930, the trustees of the Port of Bombay passed a resolution expressing their deep regret at the death of Dr. S. S. Batiwala, one of the representatives of the Municipal Corporation on the Board, and tendering their respectful sympathy to his family.

Renewals for three years in each case were granted of leaseholds, Rent Roll Nos. 788 and 1,017, the former comprising an area of 6,000 sq. yards at Connaught Road, Frere Recalamation, and the latter a go-down at Town Bunder.

Sanction was accorded under the provisions of the Indian Ports Act to the following annual grants from the Port Fund:—A donation of Rs. 500 to the Pechey Phipson Sanitarium at Nasik for the year 1930.

A contribution of Rs.4,899 to the Goculdas Tejpal Hospital Nursing Association in respect of the year 1930-31, the sum representing a moiety of the cost of the treatment of seamen in-patients of the hospital during the preceding 12 months.

At a meeting of the Trustees of the Port of Bombay, held on the 4th November, 1930, a letter from Mr. Fazul Ibrahim Rahimtulla resigning his seat was recorded with regret. Mr. Fazul was one of the senior members of the Board, having served for close on ten years, first as a Government nominee and latterly as a representative of the Municipal Corporation.

Other items disposed of at the meeting were:—A contract for the supply of 23,000 gallons of petrol during 1931 was placed with the Indo-Burma Petroleum Co., Ltd. A 15-year renewal of a leasehold admeasuring 607 sq. yards at Itola Street, Elphinstone Estate, was granted on revised terms to the existing lessees for godowns for storage of non-hazardous goods.

The following supplementary estimates of expenditure were sanctioned:—Rs.19,645/- for laying a siding to facilitate the landing of heavy lifts at No. 10 Berth, Alexandra Dock; Rs.10,231/- for special repairs at Ballard Pier Station building.

Minor estimates were also sanctioned for dismantling and repairing the sheds on surrendered leaseholds Rent Roll Nos.

831, 833 and 943 (formerly known as Chotani Saw Mills), Sewri; also for improving the lighting at Berths Nos. 19 and 20, Alexandra Dock Harbour Wall, as a measure of safety when oil tankers are discharging.

The Board accepted an offer from the Porebunder State of Rs.18,000 for the purchase of two 250-ton cargo barges which were bought from Government in 1920 and are now surplus to requirements.

IMPORTS AND EXPORTS AT THE PORT OF BOMBAY.

	1929			1930		
	Quarter ended 30th Sept.	Export Tons.	Total Tons.	Quarter ended 30th Sept.	Export Tons.	Total Tons.
Docks ...	454,399	584,353	1,038,752	385,294	553,031	938,325
" (Trans-shipment)	71,150	41,954	113,104	46,820	33,433	80,253
Bunders ...	235,191	40,245	275,436	139,016	48,564	187,580
Total ...	760,740	666,552	1,427,292	571,130	635,028	1,206,158
Total from 1st April to 30th September ...	1,698,248	1,518,008	3,216,256	1,332,239	1,365,987	2,698,226

Vessels, other than ferry steamers, hired transports, Government vessels and country craft, which entered and left the Port of Bombay.

	1929		1930	
	Quarter ended 30th Sept. Number	Net register tonnage.	Quarter ended 30th Sept. Number	Net register tonnage.
(a) Entered.				
Vessels engaged in foreign trade	207	808,203	197	748,549
Vessels engaged in coasting trade	239	352,147	237	321,572
Total from 1st April to 30th Sept.	1,175	2,462,352	1,137	2,325,086
(b) Cleared.				
Vessels engaged in foreign trade	138	532,896	152	583,913
Vessels engaged in coasting trade	310	628,634	291	510,691
Total from 1st April to 30th Sept.	1,188	2,523,939	1,119	2,341,414

Manchester to provide Foreign Animals Wharf.

Representatives of the Manchester Corporation have had interviews with the Manchester Ship Canal Company and the Steamship companies now conveying animals direct to Manchester to discuss the closing of the Salford Cattle Market and the idea of providing for its continuation at Mode Wheel.

The Markets Committee, in a report to the City Council, states that in 1895 the Corporation provided, at considerable expense, a foreign animals wharf on the banks of the Ship Canal in the areas of the Urban District Councils of Stretford and Barton-upon-Irwell, and the wharf was used to its full capacity on many occasions for the landing and slaughtering of animals imported from Canada, the United States, and the Argentine. The premises were extended in 1906 by the provision of additional lairage accommodation, and the total capacity at the present time is equivalent to nearly 2,000 head of cattle, in addition to some provision for sheep. The premises, which for some years past have been managed by the Ship Canal Company for and on behalf of the Corporation, have not been used to their full extent since the cessation of the foreign animal shipments in 1912, and the income has shown a serious falling off. Strenuous efforts have been made by both the Ship Canal Company and the Markets Committee to increase the trade in Irish animals, but the results cannot be regarded as satisfactory. On the contrary the number of Irish animals landed last year (15,907 beasts and 16,539 sheep and lambs) indicated a continued decline of the business. For some time past the committee, in conference with the Ship Canal Company, have had under consideration the question of the future utilisation of the premises, having regard to the limited use to which they are put and the consequent serious deficit in the working expenses of the wharf.

The committee came to the conclusion that every reasonable effort should be made to retain the general livestock market within the Manchester area. The principal work which would be necessary in order to equip premises for this new purpose would be the construction of railway sidings and cattle loading docks on the site and the provision of additional sheep pens, and it is estimated that the total outlay will be about £25,000.

The committee have received strong support for such a scheme and the traders have agreed to a certain scale of tolls for the facilities provided. There is a reasonable prospect of the income from the premises increasing to such an extent as will obviate the loss which has been apparent for many years past on the working expenses of the animals landing wharf. If the project

is proceeded with the premises will cease to be used as a wharf for the landing of Irish or Canadian animals, but such livestock will be permitted to enter the market after passing through any other landing place.

As it is expedient the work should be carried out with as little delay as possible, the Manchester City Council has authorised the Markets Committee to accept tenders and enter into contracts which are within the limits of the expenditure already referred to.

London's Shipping.

During the week ended October 31st, 996 vessels, representing 939,028 net register tons, used the Port of London; 572 vessels (762,978 net register tons) were to and from Colonial and foreign ports, and 424 (176,050 net register tons) were engaged in coastwise traffic.

\* \* \* \*

During the week ended November 7th, 1,171 vessels, representing 984,881 net register tons, used the Port of London. Five hundred and eleven (784,340 net register tons) were to and from Colonial and foreign ports, and 660 (200,541 net register tons) were engaged in coastwise traffic.

\* \* \* \*

During the week ended November 14th, 1,065 vessels, representing 915,532 net register tons, used the Port of London; 501 vessels (718,309 net register tons) were to and from Colonial and foreign ports, and 564 (197,223 net register tons) were engaged in coastwise traffic.

\* \* \* \*

During the week ended November 21st, 1,036 vessels, representing 1,008,114 net register tons, used the Port of London. 600 vessels (830,089 net register tons) were to and from Colonial and Foreign ports, and 436 (178,025 net register tons) were engaged in coastwise traffic.

Nearly 40,000 boxes of Canadian Cheese, the largest single importation of recent years, have just arrived at the Surrey Commercial Docks by the s.s. "Beaverburn." The bulk of the consignment has been placed in the Authority's cold stores.

## Trade Statistics for British India.

### India's Foreign Trade.

THE trade returns of British India for the month of September, 1930, as compared with the preceding month, showed a decrease in the value of imports and re-exports with an increase in exports. The imports of private merchandise totalled Rs. 11,18 lakhs, a decrease of Rs. 1,56 lakhs, as compared with the preceding month. The value of exports of Indian produce and manufactures rose by Rs. 1,89 lakhs from Rs. 17,25 lakhs in August, 1930, to Rs. 19,16 lakhs in the month under report; re-exports fell by Rs. 13 lakhs to Rs. 24 lakhs.

Treasure on private account, including currency notes, showed a net import of Rs. 1,57 lakhs in September, 1930, as compared with Rs. 5,13 lakhs in the preceding month and Rs. 1,53 lakhs in September, 1929. The import and export figures of gold and silver during the six months, April to September, 1930, compare as follows with the corresponding period of the preceding year:—

		Six Months, April to September.		Increase or Decrease.	
		1930	1929	1930	1929
Gold Imported	...	11,52	7,38	+4,14	+56.1
Gold Exported	...	—	1	—	—
Silver Imported	...	7,26	6,03	+1,23	+20.4
Silver Exported	...	31	52	—21	—40.4

Measured by the statistics of merchandise and treasure, the total visible balance of trade in September, 1930, was Rs. 6,80 lakhs in favour of India as compared with an adverse balance of Rs. 14 lakhs in August, 1930, and a balance of Rs. 5,73 lakhs in favour of India in September, 1929. During the six months ending September, 1930, the visible balance of trade in merchandise and treasure was Rs. 19,93 lakhs in favour of India as compared with Rs. 27,55 lakhs in the corresponding period of the preceding year. The balance of remittances of funds in September, 1930, was minus Rs. 65 thousand and in the six months ended September, 1930, minus Rs. 6,36 lakhs.

### Changes in Imports.

As compared with September, 1929, the imports of food, drink and tobacco, raw materials and manufactured articles in September, 1930, declined by Rs. 81 lakhs, Rs. 30 lakhs and Rs. 6,89 lakhs to Rs. 2,12 lakhs, Rs. 1,55 lakhs and Rs. 7,24 lakhs respectively. Under food, drink and tobacco, imports sugar 16 S.D. and above, including beet sugar, decreased by 8,000 tons in quantity and by Rs. 43 lakhs in value. The imports of cigarettes which were valued at Rs. 13 lakhs in September, 1929, fell to Rs. 2 lakhs in September, 1930. The other important decreases were in provisions and oilman's stores (Rs. 11 lakhs) and liquors (Rs. 8 lakhs). Under raw materials, the imports of kerosene oil declined by a million gallons in quantity and by Rs. 7 lakhs in value. The imports of fuel oil also declined by three million gallons in quantity and by Rs. 1 lakh in value. The value of "precious stones and pearls unset" imported fell away to Rs. 4 lakhs from Rs. 13 lakhs in September, 1929. Raw cotton showed an increase of nearly 2,000 tons in quantity and Rs. 18 lakhs in value. Under manufactured articles the imports of cotton yarn and manufactures declined by Rs. 3,63 lakhs. The imports of twist and yarn recorded a decrease of nearly half-a-million lbs. in quantity and Rs. 20 lakhs in value. The decrease in imports of cotton piecegoods was shown by all the three subdivisions, namely grey, white and coloured. Imports of grey goods amounted to 17 million yards valued at Rs. 33 lakhs as compared with 71 million yards valued at Rs. 1,65 lakhs in September, 1929, while those of white and coloured goods totalled 12 and 19 million yards valued at Rs. 30 and Rs. 54 lakhs as against 42 and 47 million yards valued at Rs. 1,18 lakhs and Rs. 1,53 lakhs respectively a year ago. The imports of iron and steel fell by 50 lakhs of rupees, of which sheets and plates accounted for Rs. 23 lakhs and steel bars Rs. 15 lakhs. Machinery and mill work, including belting, recorded a decrease of Rs. 47 lakhs and woollen manufactures of Rs. 40 lakhs. The other noticeable decreases were under cutlery, hardware and instruments (Rs. 22 lakhs), paper and pasteboard (Rs. 19 lakhs), silk manufactures (Rs. 18 lakhs), piecegoods of cotton and artificial silk (Rs. 16 lakhs), motor cars (Rs. 14 lakhs), glass and earthenware (Rs. 12 lakhs) and apparel (Rs. 11 lakhs).

### Variation of Exports.

Exports of food, drink and tobacco in September, 1930, compared with September, 1929, decreased by 67 lakhs to Rs. 5,57 lakhs due mainly to decreases in the export of tea. The quantity of rice not in the husk exported increased from 100,000 to 114,000 tons, but the value fell from Rs. 1,62 lakhs

to Rs. 1,47 lakhs owing to level of prices. The exports of tea declined by 5 million lbs. in quantity and by Rs. 64 lakhs in value. The exports of wheat improved from 2,000 tons to 20,000 tons in quantity and from Rs. 3 lakhs to Rs. 20 lakhs in value. Raw materials and produce exported decreased by 4,58 lakhs to 7,49 lakhs. Under this group, raw cotton recorded an increase of 13,000 tons in quantity and of Rs. 2½ lakhs in value. Of the total shipments of 51,000 tons, Japan took 27,000 tons or 53 per cent., China 9,000 tons or 18 per cent., Germany and Italy 4,000 tons each, France 3,000 tons, Belgium, Spain and the United Kingdom 1,000 tons each.

Shipments of raw jute recorded a decrease of 52 tons in quantity and Rs. 2,29 lakhs in value. The exports of oil seeds showed a decrease of Rs. 1,22 lakhs in value. Under ground nuts there was a decrease of 63 lakhs and under linseed, castor and cotton seed Rs. 40 lakhs, Rs. 10 lakhs and Rs. 6 lakhs respectively. Exports of oil cakes recorded a decrease of Rs. 10 lakhs. Shipments of lac also decreased by 36 lakhs. The exports of raw hides and skins declined by 1,000 tons in quantity and by Rs. 26 lakhs in value. Shipments of raw wool also declined by 2 million lbs. in quantity and by Rs. 16 lakhs in value. Manufactured goods fell by Rs. 1,39 lakhs to Rs. 5,93 lakhs. The number of jute bags shipped rose from 48 million in September, 1929, to 56 million in September, 1930, but the value shrank from Rs. 2,26 lakhs to Rs. 2,03 lakhs. The yardage of gunny cloth exported rose slightly from 132 million in September, 1929, to 133 million in September, 1930, but the value fell from Rs. 2,47 lakhs to Rs. 1,82 lakhs. Exports of cotton manufactures declined by 23 lakhs, tanned or dressed hides and skins though increased slightly in quantity, decreased in value by Rs. 11 lakhs.

The share of the United Kingdom in imports fell from 43 per cent. in September, 1929, to 35 per cent. in September, 1930, while her share in exports rose from 25 to 26 per cent. The shares of Germany, Japan and the United States in September, 1930, were respectively 9, 6 and 9 per cent. under imports and 5, 12 and 9 per cent. under exports.

### Movements of Shipping in Indian Ports.

The tonnage of vessels entered into British Indian ports and cleared outwards with cargoes from and to foreign countries and British Possessions during the month of September, 1930, amounted respectively to 642,000 and 635,000, as against 634,000 and 641,000 in August, 1930, and 627,000 and 767,000 a year ago. During the six months ending September, 1930, the tonnage of vessels entered and cleared with cargoes amounted respectively to 3,834,000 and 4,104,000 as compared with 3,979,000 and 4,382,000 in the corresponding period of the preceding year.

### New Shipping Line to India.

The express shipping line from Swedish ports to India is being started by the Swedish East Asiatic Company, in co-operation with the Norwegian Wilhelmsen Shipping Company. M. Gustaf Borin, managing director of the Swedish East Asiatic Company, announced that this Scandinavian-Indian line will employ ten large ships, some of which will run express service to the two most important Indian ports, while the others will cover all the principal ports of India. If sufficient cargo is obtained, the service may be further enlarged.

### Opening of New Canadian Lake Port.

The arrival at Prescott, Ontario, recently of the freighter "Sarniadoc," of the Patterson Steamship Lines coincided with the unofficial opening for business of the new 5,500,000-bushel grain elevator erected by the Canadian Government at this port. The steamer carried 90,000 bushels of barley, and unloaded its cargo at the new elevator on October 13th.

The full usefulness of the great new grain terminal will, however, not be attained until next year, when the large freight steamers from the upper Great Lakes come through the Welland Ship Canal to discharge their cargoes at Kingston and Prescott. At the port of Kingston preparations are in active progress for the new traffic, two large elevators being under erection by private companies. While the large upper Lake freighters, some of which are capable of carrying up to 500,000 bushels of grain, will not be able to reach Prescott this year, it is expected that the new elevator will be dealing with cargoes from many small vessels and that it will be filled to capacity before the close of navigation on the lakes this autumn. The official opening of the new terminal is expected to take place with the arrival of the second cargo.



## Notes of the Month.

### A Suction Cutter Dredger Launched.

Messrs. Ferguson Brothers launched on November 12th, complete with machinery aboard ready for work, the suction cutter dredger "Prince Farouk," built to the order of the Tilbury Contracting and Dredging Co. (Egypt), Ltd., for service in Sudan.

The ladder is fitted to enable the vessel to cut in front and make her own flotation. The discharge is carried on two large pontoons, which are attached to the after end of the vessel. The suction pipes carried on these pontoons are led over banks at the side of the channel for discharge ashore at a suitable height.

The main engines are of the triple expansion type and driven direct by dredging pump. Steam is supplied by a marine boiler oil fired and having forced draught. The pontoons were also built by Ferguson Brothers and were launched early in November.

### The Institution of Civil Engineers.

The Institution of Civil Engineers will be holding an ordinary meeting on Tuesday, December 2nd, at 6 p.m., when the paper to be submitted for discussion will be "Cairo Main Drainage Extensions," by Albert Onslow Wheeler Day Pinson, M.Inst.C.E. There will also be a ballot for new members.

An informal meeting will be held on Wednesday, December 10th, at 6 p.m., when the subject for discussion is "Atmospheric Pollution due to Combustion of Fuel, and Methods of its Prevention," by John Switzer Owens, M.D., Assoc.M.Inst.C.E. Mr. Sydney Bryan Donkin, member of Council, will take the chair.

### Motor-driven River Cargo Boats wanted for Montevideo.

The Acting Consul-General at Montevideo reports that the National Port Administration are calling for tenders to be presented in Montevideo by February 25th, 1931, for the supply and delivery of two shallow draught motor-driven river cargo boats. Offers for steam driven vessels will also be considered.

Firms desirous of offering British-built boats can obtain further particulars of this call for tenders upon application to the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1, and reference number A.X.10557 should be quoted.

### Marconi International Marine Communication Company, Ltd.

An agreement has been arrived at between the Marconi International Marine Communication Co., Ltd., and the Chamber of Shipping of the United Kingdom and the Liverpool Steamship Owners' Association in regard to the terms under which the Marconi Marine Company is prepared to carry out marine wireless on British ships in the future.

As a part of this arrangement the Marine Company agreed to appoint to its board of directors a member to be nominated by the shipping industry, and it was unanimously decided on behalf of the two shipping organisations to nominate the Hon. Alexander Shaw.

At a meeting of the Board of the Marconi International Marine Communication Co., Ltd., held on November 5th, Mr. Shaw was appointed a director of the company.

Mr. Shaw is a deputy chairman of the P. and O. Steam Navigation Company and a director of the Bank of England.

### Isle of Man Pier Extension.

The sum of £40,000 has been voted by Tynwald for the purpose of enabling the Isle of Man Harbour Commissioners in consultation with the Lieutenant-Governor, to continue with the work of extending the Red Pier, Douglas Harbour. This money is required for dredging operations at the Red Pier. Much of the work was done during the summer months. It is estimated that the Red Pier improvement scheme will cost £250,000 and the work will be spread over seven or more years. Tynwald has also authorised the Isle of Man Harbour Commissioners to acquire from the Isle of Man Steam Packet Company, for the purposes of the Red Pier Extension works, a piece of land which will be used in connection with the work of building a roadway between the Red Pier and the Victoria Pier.

### Repairs and Extensions in the River Ouse.

The King's Lynn Conservancy Board are at present engaged on repairing and extending for a distance of 800 yards the Western Stone Bank, or training wall of the estuary cut at the mouth of the River Ouse, 1½ miles below King's Lynn. The work was commenced in August and is expected to be completed by the end of this year.

The scheme originally proposed was to repair the bank at a cost of £10,000, and a grant was obtained from the Ministry of Agriculture and Fisheries for half the cost under the un-

employment scheme. It was afterwards found advisable to enlarge the scheme to comply with a much vaster scheme contemplated by the engineer of the Ouse Drainage Board, and which increased the cost to £13,500.

### Tenders for New Zealand.

His Majesty's Trade Commissioner at Wellington reports that the Bluff Harbour Board is calling for tenders, to be presented in New Zealand by February 7th, 1931, for the supply of a new twin screw tug and salvage vessel (Contract No. 508).

Firms desirous of offering a British-built vessel can obtain further particulars of this call for tenders upon application to the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1. Reference number A.X.10506 should be quoted.

### The Junior Institution of Engineers.

At the 49th annual general meeting the the Junior Institution of Engineers, held on the 14th November, the following election of officers took place:—Chairman, Edwin D. Gill, F.C.I.S.; Vice-Chairmen, J. Foster Petree, A.M.I.Mech.E., A.M.I.N.A., and H. P. Wright; Honorary Editor, C. E. Atkinson, A.M.I.E.E.; Honorary Treasurer, W. H. Hurrell; Honorary Librarian, L. H. Ardley; Senior Councillors, A. E. Bingham, E. G. Stone and F. G. Pasotti, M.Soc.Glass Tech.; Junior Councillor, Peter Drummond; Honorary Auditors, G. V. Rickards, J. W. Stenson, T. B. Elliott-Moore, and W. H. G. Churchill.

### Port of Manchester Notes.

In spite of the general trade depression, the frequent sailings of the various steamship services to and from the Port of Manchester have been maintained, twenty-six steamers having arrived during the month from North Atlantic ports, although, of course, the cargoes have not been quite as large as usual.

From Scandinavia sixteen steamers arrived bringing shipments of paper, pulp and timber.

On the Indian service the arrivals averaged one vessel a week, four steamers having brought consignments of tea and cotton; shipments to the port of this latter commodity continue to come along in good quantities, and up to now this season the shipments have been twice as heavy as in the corresponding period of last season.

The Green Fruit season with the Mediterranean has now opened and five cargoes were received during the month and it is anticipated that this number will be greatly exceeded during the next few weeks as the Christmas fruit will be on the market.

Four steamers brought shipments from the Pacific Coast and there was another arrival from the West Coast of South America, the s.s. "Maple Branch" bringing a cargo from Chile which included 1,000 tons of copper.

The importation of pit-props has been satisfactory during the month, five full cargoes having been received.

A full cargo of newsprint for Manchester arrived and the s.s. "Garryvale," which brought a cargo of wood pulp early in the month for Messrs. Bowater's Paper Mills at Ellesmere Port is now on her way with a second shipment for these mills, while the s.s. "Blairatholl" is also on passage with a cargo of wood pulp.

The outward steamship lines have maintained their usual services. Four coke cargoes were despatched during the month, including shipments for Scandinavia.

Canadian cattle continue to arrive and bookings have been fixed for some weeks ahead.

Further shipments of locomotives for the Sudan Government Railways were expected to be made from the Port towards the end of November.

Grain prospects for the Port are brighter and a number of cargoes are on passage, and so far as this commodity is concerned, the situation is quite satisfactory.

### Anniversary of the Handing Over of Southampton Docks.

On November 1st was celebrated the 38th anniversary of the handing over of Southampton Docks from the old Southampton Dock Company to the L. and S.W. Railway Co., now the Southern Railway. The transaction followed the inability of the old Dock Company to raise the necessary capital to meet the requirements of the expanding trade at the port.

This handing over marked a new era of prosperity for the port. At the time of the transfer much of the estate was undeveloped and the new proprietors immediately proceeded to increase the accommodation and to improve the facilities, with the result that at the present time the tonnage dealt with at Southampton Docks exceeds the total for 1892 by 627.8 per cent., while the average gross tonnage of vessels has also increased by 437.7 per cent.

## Scottish Harbour Notes.

### Perth refused Government Grant.

It is intimated that an application for financial assistance by the Navigation Committee of Perth Town Council—in order to erect a sand bank at the lower harbour—has been refused by the Unemployment Grants Committee. It is understood that the grounds for this refusal are that the labour costs were not big enough to justify such a grant, and considerable disappointment is felt by the members of the local Town Council at this application being negated. It was felt that the construction of an up-to-date sand bank at the lower harbour would have afforded a very useful improvement.

### Rothsay Harbour Trust.

It was reported at a recent meeting of Rothsay Harbour Trust that the last payment has been made to the £17,000 loan originally received some sixty years ago, and it was also stated that in seven years the local harbour would be free of debt. Great satisfaction was expressed among the members of the Trust at this happy condition of affairs, and the freeing of the local harbour from debt within the course of the next few years (it was felt) would be very beneficial to this burgh. The financial statement for the past year showed a total revenue of £6,551 as compared with £7,251 the previous year, while the total expenditure for the period under review was £7,005 as compared with £7,850 last year. It was reported that the turnstile receipts showed an increase of £118 (the total being £3,220), and the steamboat dues showed an increase of £9 (the total being £2,920), and the feeling was expressed that this increase in the turnstile takings was clear and conclusive proof that "Royal Rothsay" was more than maintaining its hold on public popularity as a summer resort.

### Nairn in Danger from High Tides.

At a recently-held meeting of Nairn Town Council, the engineers for the new local harbour scheme intimated that, unless two or three groins were erected in the near future along the fore-shore west of the harbour, the low-lying part of the town and a stretch of the town's links would be in grave danger of being swept away by high tides. It was further pointed out by the engineers that the "mole" was simply a temporary structure built to keep back the sea so that the contractor could proceed with the construction of the basin. It was agreed by the Town Council to give this important matter further consideration at another meeting, and also to consider the question of a grant being obtained for the necessary work.

### Cromarty Harbour and Government Grant.

A strong plea for Government assistance was made at a recently-held meeting of farmers, traders and merchants in the Black Isle interested in the maintenance of Cromarty Harbour when a resolution was unanimously passed urging upon the Government departments concerned the inconvenience and loss that is being caused by the unsatisfactory condition of the bridge at this harbour. It was further resolved that—recognising the difficulty in which the local Harbour Trustees were placed financially—the Government departments concerned should be urged to deal as liberally as possible with the matter of cancellation of loans. It is reported that the Treasury had offered to the Cromarty Harbour Trustees a grant of £1,000 from the Development Fund in aid of the cost of strengthening the bridge at the local harbour, but that the present liabilities of the Harbour Trustees made it impossible for them to accept this offer.

### Additional Grant for Reconstruction Work at Girvan.

An additional grant and the cancellation of a debt at Girvan Harbour which have now been sanctioned by the Development Commissioners, and the total debt on the harbour is now reduced to approximately £16,000. The local harbour was taken over by the Town Council in 1923, and a scheme of improvement was begun involving an expenditure of £29,237, for which grants amounting to £7,900 were received. The Fishery Board sanctioned a further grant of £4,000 for the repair of the fish wharf, and this work is now in progress. The Development Commissioners have now agreed to a grant not exceeding £4,000 for the construction of a heavy reinforced concrete groin. The dredging loan (which with accumulated interest amounted to £4,120) is wholly remitted, and consequently a condition regarding the raising of the harbour rate by sixpence in the pound is withdrawn.

### Wick Harbour Trustees to Proceed with Improvement Scheme.

Wick Harbour Trustees have now received sanction from the Treasury for their full improvement scheme estimated to cost £58,633. Recently the Treasury passed an application for

a loan of £22,463 for work on the river harbour, and at a recent meeting of the Harbour Trustees a letter was read sanctioning the remainder of scheme as follows—Deepening existing basins, £10,500; refacing quay at inner basin, £12,019; underpinning quays, £9,082; and securing north pier, £5,500. This represents a total of £36,170, and it is hoped to proceed with this important scheme of work as quickly as possible. It is intimated that Wick Harbour revenue for the year to the end of October amounted to £17,462, which represents a decrease of £895 as compared with the preceding year.

### Port of Leith.

Trade conditions generally and the needs of the Port of Leith—particularly the grain discharging and coal loading requirements at the docks—were discussed at the recently held meeting of Leith Dock Ratepayers Association. Mr. William Whitelaw (a representative of the Dock Ratepayers and Leith Dock Commission) said that, owing largely to the changes brought about by the war, there was still a loss in general cargo tonnage of about three-quarters of a million tons or fully one-third of the pre-war trade. Speaking of the needs of the grain trade he added that there was no doubt in his mind the Commission must make provision for a growing demand for elevator services. The warehouse built on the site of the old building (which was destroyed by fire) need not be so large as the old store. One with a total capacity of 20,000 tons would cost about £195,000, but one even a little less than this, both in cost and capacity, and working in conjunction with the present warehouse would probably meet all requirements.

Continuing, Mr. Whitelaw said he could safely say that there was no divergence of opinion on the desirability of discharging the larger vessels in the Imperial Dock, but the great difficulty was one of costs and how these could be recovered. A new building there with a capacity of 24,000 tons (and this tonnage seems necessary if the warehouses were separated) would—taking into account necessary discharging plant, alterations to quay, and the provision of new roads and railways—cost fully £100,000 more than rebuilding on the old site. That in itself was a serious matter, but it was more serious when they considered that, owing largely to the separation of the two warehouses, the working cost on the tonnage handled in both buildings would be increased by about £5,000 per annum—that without taking into account another £5,000 or so per annum for interest, and sinking fund on the extra expenditure. Regarding the suggestion for a warehouse on the old site with discharging apparatus at the Imperial Dock and a conveyor gantry along the north side of the Edinburgh Dock to the two warehouses (the same speaker added) the additional cost of the scheme (taking into account gantry equipment and discharging plant) would be £95,000. There would be working advantages as far as the warehouses were concerned in having the two buildings together, but this would be partly offset by the costs of working the gantry and discharging plant in labour and machinery.

### Meeting of Glasgow Chamber of Commerce.

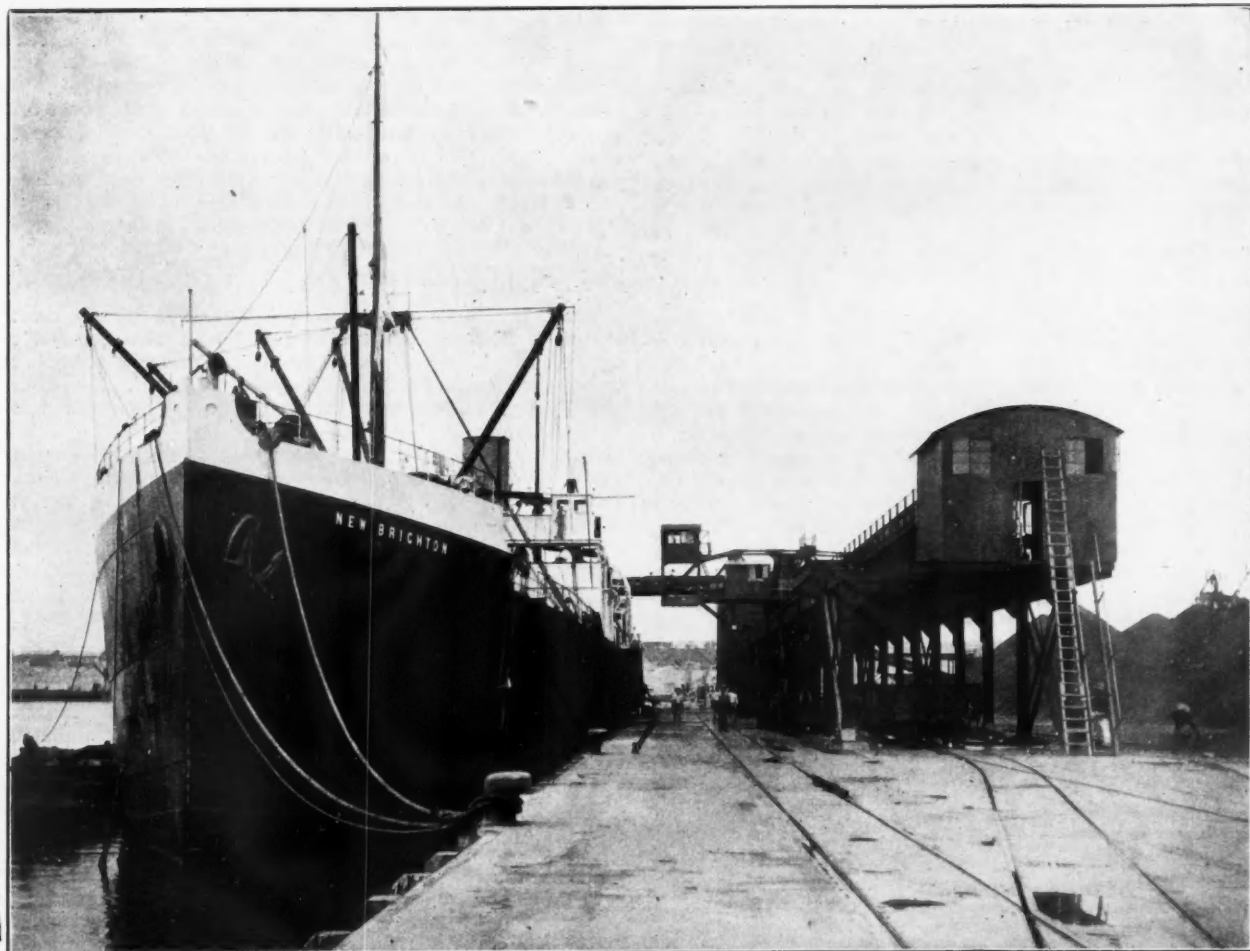
It was intimated at a recent meeting of Glasgow Chamber of Commerce that notice had been given in the newspapers that the London, Midland and Scottish and the London and North Eastern Railway Companies had made application to the Minister of Transport for provisional orders to authorise them to continue their existing charging powers in Scotland in connection with dock undertakings. After discussion it was agreed to inform the Association of British Chambers of Commerce that—as the traders whose interests were particularly concerned were dealing with this matter direct—it was not anticipated that the Chamber would take any action in connection therewith. At the same meeting it was agreed to appoint Mr. James Morton as a delegate to represent the Glasgow Chamber on the Clyde Navigation Trust for the ensuing two years; while Messrs. J. A. Roxburgh and William Henderson were elected as representatives to the Clyde Light-houses Trust each for a period of one year.

### Launch of a Twin-screw Tug.

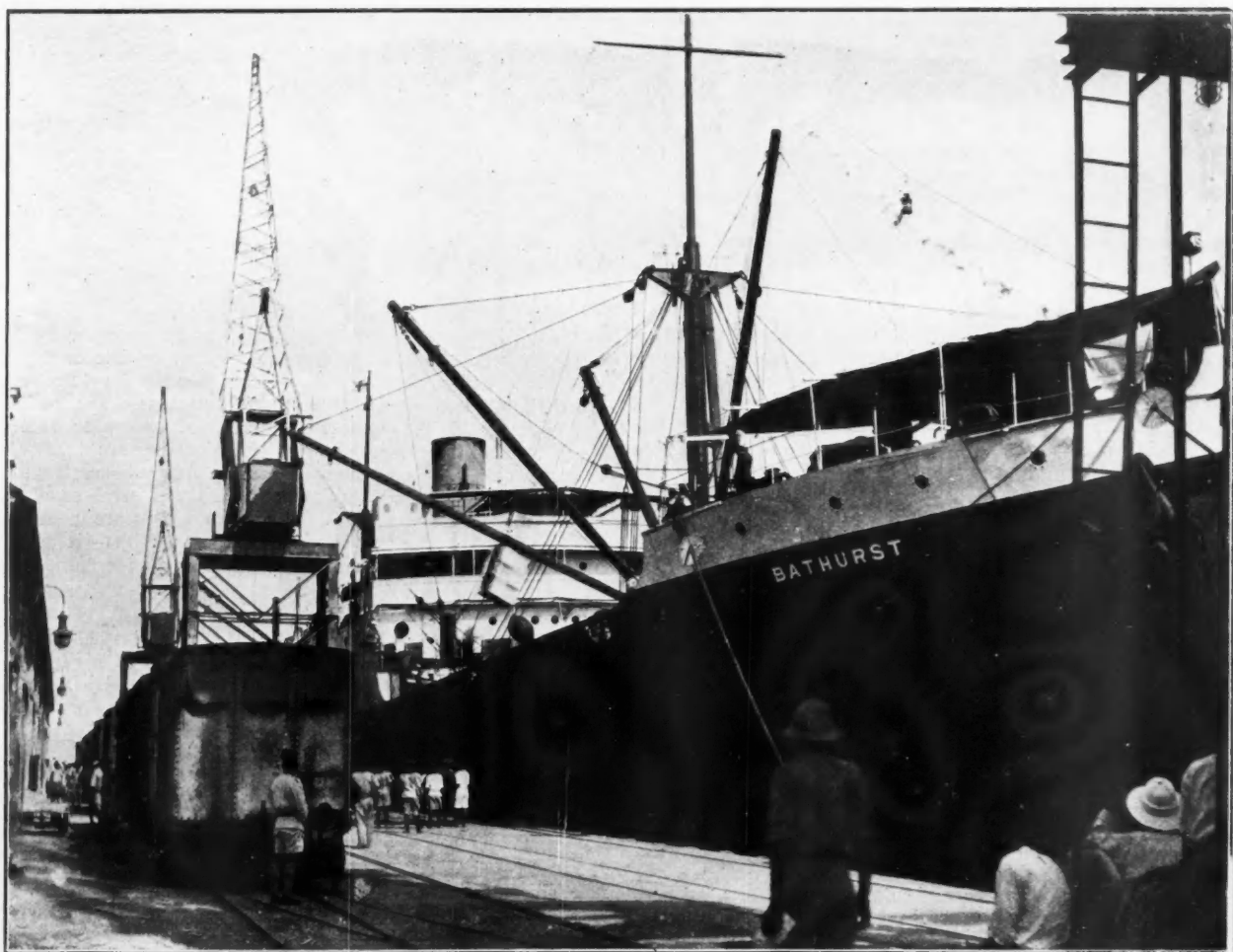
Messrs. Ferguson Brothers (Port Glasgow), Ltd., launched on October 29th a twin-screw tug named "Abeille 16" for French owners.

The machinery, which is being supplied by the builders, consists of two sets of triple expansion engines of 1,100 i.h.p. Steam is supplied by a large boiler fitted with Howden's Hot Air Forced Draught. The working pressure is 180 lbs. per sq. in. Comfortable accommodation is arranged for officers and crew. The vessel is intended for harbour and sea service.

## *Takoradi Harbour.*



*Loading Manganese.*



*Vessel discharging at Main Wharves.*



## Takoradi Harbour.



*Vessels at Moorings. Lighter Moorings in foreground.*

THE Coast of Africa within the Gulf of Guinea is low, shelving and surf beaten, with numerous lagoons and rivers with shallow and dangerous bars, quite unsuitable for shipping. There is no natural harbour between Freetown in Sierra Leone and Lagos in Nigeria, a distance of some 1,200 miles.

Communication between ship and shore for hundreds of years was maintained by surf boat and canoe. This process of landing and embarking cargoes is slow, hazardous and costly. Consequently loss and damage of cargoes was of frequent occurrence, and freights and insurance were high, thereby hampering trade. In the early part of this century boat harbours were built at Sekondi and Accra, on the Gold Coast, permitting the use of steam launches and lighters, but silting became excessive and the cost of maintaining and dredging these small ports was relatively very high.

It was therefore decided, in the year 1919, that a deep-water port was necessary. Extensive investigations into the sets of the currents, the amount of sand in suspension in the waters along the coast, etc., etc., were undertaken, and it was finally decided that the Bay of Takoradi, some 4 miles south of Sekondi, was the only suitable place. Work was commenced in 1921 and the port was opened to traffic in 1928.

The harbour is composed of two breakwaters, some 2,500-ft. apart running out from the shore in an easterly direction.

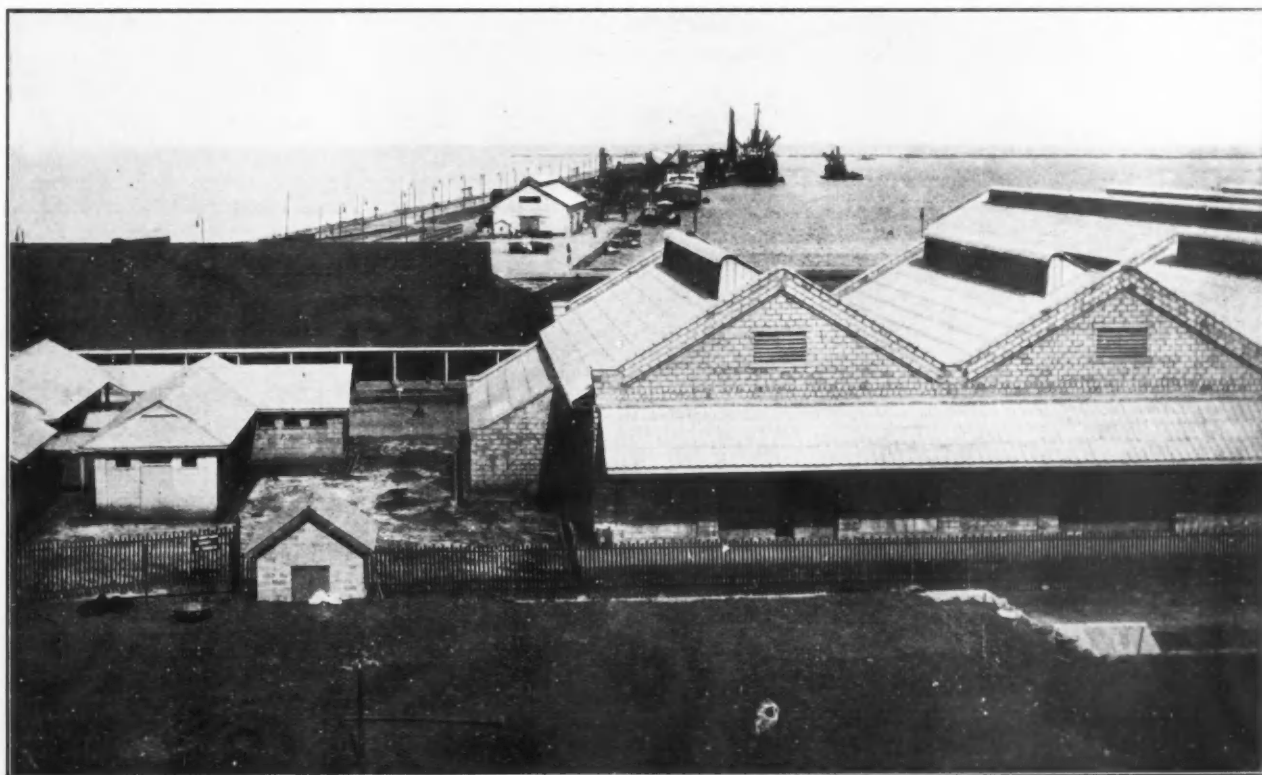
The South or Main Breakwater, after a distance of 4,600-ft. curves to the northward for 2,300-ft., the total length being approximately  $1\frac{1}{2}$  miles. The North or Lee Breakwater, has a length of about 4,500-ft. The area of water enclosed by these two breakwaters is approximately 220 acres.

The entrance to the port is 800-ft. in width at the surface decreasing to 600-ft. on the sea bottom, the depth of water being 42-ft. at L.W.O.S.T. The depths within the harbour vary from 2-ft. to 40-ft. The entrance is marked by red and green fixed lights and there is a light and whistle "Turning Buoy" two miles East of the extremity of the Main Breakwater. An electrically controlled Fog Bell is erected at the extremity of the Lee Breakwater.

The Lee Breakwater, which is provided with rail and road facilities, has four wharves of a total length of 1,000-ft. Two of these wharves are allocated to imports, one for the export of Manganese, and the fourth for Coal Traffic.

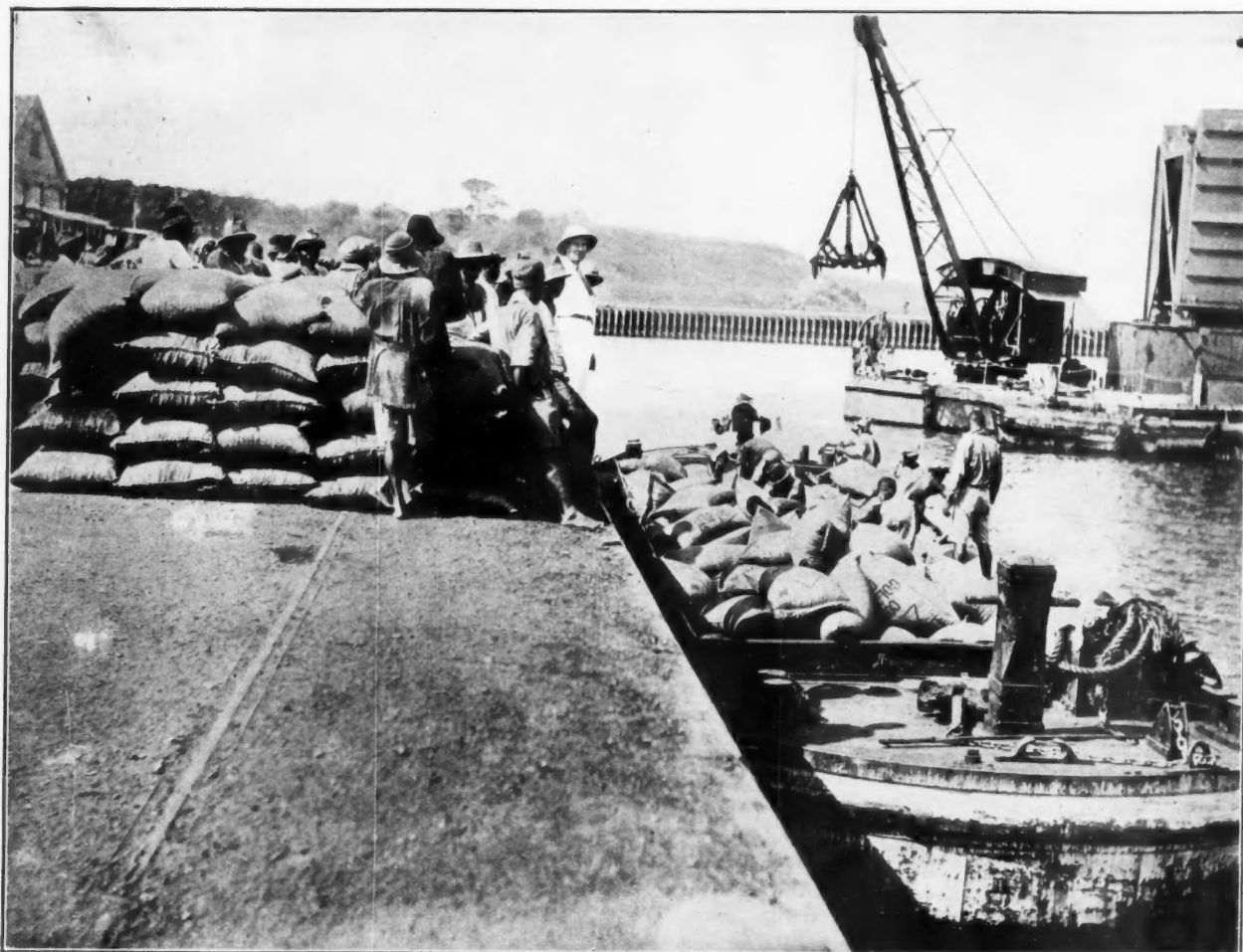
The depths at the former vary from 27-ft. to 31-ft. and at the latter from 13-ft. to 16-ft.; at the Manganese Wharf there is a least depth of  $31\frac{1}{2}$ -ft. Spring Range 7-ft.

Six sets of moorings for ocean-going vessels are provided in the deep water portion of the harbour, in depths varying from 29-ft. to 37-ft. L.W.O.S.T. The moorings are of 650-ft. length and are laid in a N.E. and S.W. direction 350-ft. apart. There are also 20 sets of tug and lighter moorings in an E.

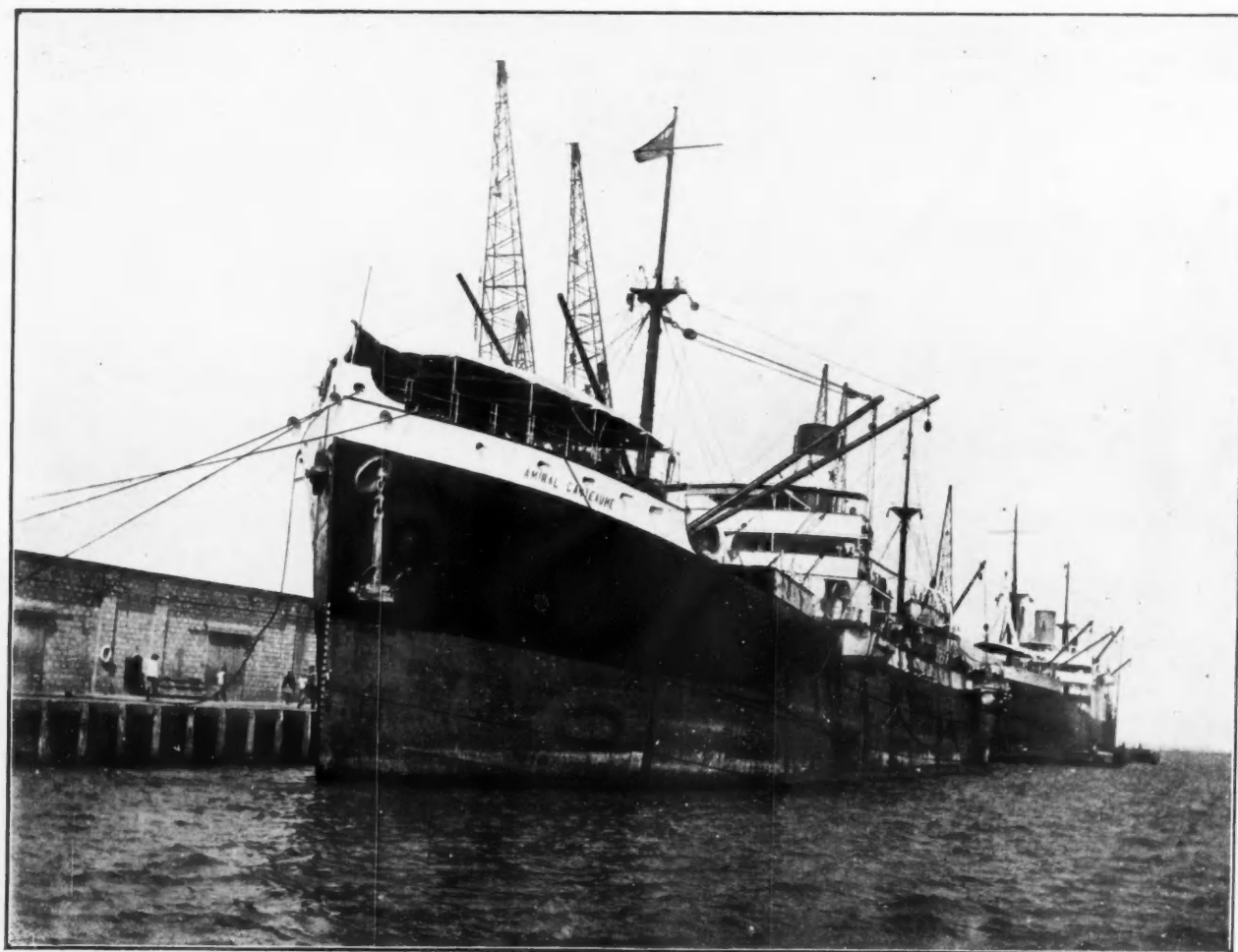


*View of Wharves from Signal Station. King's Warehouse and Customs House in Foreground.*

## *Takoradi Harbour.*



*Loading Cocoa into Lighters at West Lighter Wharf. Rock-breaking Craft in background.*



*Vessels at Main Wharves.*

Takoradi Harbour—continued.

and W. direction parallel to the Main Breakwater, in 16-ft. to 20-ft. of water. These can accommodate some 10 tugs and 60 lighters.

The Import Wharves are each provided with a Transit Shed 400-ft. by 120-ft., and three 2-ton electric portal cranes. The Coal Wharf is provided with two 4-ton Steam Gantry Cranes and two 3-ton Electric Cranes. The Managanese Plant, which is on the endless belt principle, can load up to 1,000 tons per hour.

An open dump for bulk cargoes lies to the westward of the Coal Wharf and is provided with a shed for Salt, etc., and a 3-ton Electric portal crane.

On the reclaimed ground at the inner end of the harbour are wharves for lighters for the shipping of Cacao and likewise a wharf for the storage of Mahogany and other timber. The former, which are 1,400-ft. long, have road and rail facilities and are provided with four 3-ton electric portal cranes and one 10-ton Caterpillar Crane. The latter, 800-ft. in length, is also served by the Railway and has a 4-ton steam gantry crane. The depths at these wharves vary from 1 to 8-ft. L.W.O.S.T.

Sixteen sheds, each 300-ft. by 45-ft., for the storage of cacao, have been erected on the Cacao Wharf, each shed being capable of holding 2,500 tons of Cacao.

On the northern side of the Lee Breakwater is a mooring berth in 30-ft. least water, for vessels carrying bulk petroleum. A 10-in. pipe line leads to the storage tank 2½ miles away.

At the root of the main breakwater is situated a Slipway for vessels not exceeding 500 tons displacement and 130-ft. length. Repair shops and stores have been erected in connection with the Slipway.

Fresh water can be provided from hydrants to vessels at the wharves and from a water barge (capacity 180 tons) to vessels at moorings.

Two powerful tugs (one provided with fire and salvage plant) for handling vessels and two motor launches for pilot and general work have been provided. Pilotage is compulsory.

The Port, which under the administration of the General Manager of the Railway, is fully justifying its existence.

In the last financial year 704 vessels of 3,309,155 gross tonnage entered the port and 304,000 tons of cargo, were handled, whilst 9,000 passengers embarked and disembarked.

Manganese vessels which formerly had to lie off Sekondi for any period up to three weeks now clear from Takoradi in from three to five days. The length of stay in port of general cargo vessels has also been very considerably shortened.

A comprehensive scheme of deepening is being undertaken and it is anticipated that a least depth of 30-ft. L.W.O.S.T. ultimately will be obtained at the wharves in the approach channel thereto. There will be 16-ft. at the Coal Wharves and 8-ft. L.W.O.S.T. at the Cacao Wharves.

Regular communication is maintained with the principal ports of Europe, United States of America, Canada, South and West Africa by vessels of the African Steam Ship Company; British and African Steam Navigation Company; American-West African Line; Woermann Line; Holland West African Line; Liberia Triestina Lloyd; Chargeurs Reunis; Norddeutscher Lloyd, etc., etc.

The principal imports are cotton goods, cement, petrol, kerosene, coal, dressed timber, and dry provisions. The exports consist of cacao, manganese, gold, diamonds, hides, kernels and mahogany.

Aden Port Trust.

Returns for the month of September, 1930, of shipping using the port are as follows:—

	No.	Tonnage.
Merchant vessels over 200 tons ... ..	103	406,787
Merchant vessels under 200 tons ... ..	18	2,309
Government vessels ... ..	3	5,829
Dhows ... ..	64	1,527
PERIM.		
Merchant vessels over 200 tons ... ..	26	94,649

Rs.48,16,000, as compared with Rs.52,59,000 for September, 1929, and of exports Rs.34,43,000, as compared with Rs.45,84,000.

The total value of both imports and exports together was Rs.82,59,000, as compared with Rs.98,43,000 for the corresponding month last year.

Imports during the month were above those for September, 1929, in the case of grain, pulse and flour, hardware, hides

TRADE OF THE PORT.

Article.	Unit.	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal ... ..	Tons	7,219	1,77,957	50	1,750
Coffee ... ..	Cwts.	6,118	2,00,397	7,003	3,41,386
Grain, Pulse and Flour ... ..	"	32,265	2,56,374	22,078	1,67,386
Gums and Resins ... ..	"	1,238	28,321	1,297	34,884
Hardware ... ..	"	0	16,764	0	9,901
Hides, raw ... ..	No.	2,565	5,305	7,645	12,231
Oil, Fuel ... ..	Tons	30,043	9,01,290	0	0
„ Kerosene ... ..	Gls.	0	0	5,382	3,951
„ Petrol ... ..	"	2,096	2,630	1,912	2,430
Salt ... ..	Tons	0	0	6,870	78,900
Seeds ... ..	Cwts.	2,167	31,029	1,249	16,689
Skins, raw ... ..	No.	237,220	1,76,791	247,390	2,95,174
Sugar ... ..	Cwts.	993	10,433	7,508	60,601
Textiles—					
Piece Goods, Grey ... ..	Yds.	3,993,510	6,58,695	3,620,090	5,93,918
„ „ White ... ..	"	633,041	1,62,213	247,862	69,016
„ „ Printed or Dyed ... ..	"	633,684	1,70,787	726,430	2,22,840
Twist and Yarn ... ..	Lbs.	749,764	4,32,601	462,204	2,98,302
Tobacco, Unmanufactured ... ..	"	185,136	48,124	824,208	1,39,074
„ Manufactured ... ..	"	53,452	57,359	50,064	53,901
Other Articles ... ..	No. of Pkges.	43,226	8,20,308	19,191	4,88,849
Treasure, Private ... ..	—	0	6,58,817	0	5,51,959
Total ... ..	—	—	48,16,195	—	34,43,152

The number of merchant vessels over 200 tons that used the port in September, 1930, was 103, as compared with 113 in the corresponding month last year, and the total tonnage was 407,000, as compared with 487,000.

Excluding coal, salt, fuel oil and military and naval stores and transhipment cargo, the total tonnage of imports in the month was 6,200 tons, and of exports 4,600, as compared with 7,000 and 5,300 respectively for the corresponding month last year.

The total value of imports excluding Government stores was

(raw), skins (raw), piece goods (grey, white and printed or dyed), twist and yarn and treasure (private); and below in the case of coffee, gums and resins, seeds, sugar, tobacco (unmanufactured and manufactured).

Exports were above those for September, 1929, in the case of coffee, seeds, piece goods (printed and dyed), twist and yarn, tobacco (unmanufactured), and treasure (private); and below in the case of grain, pulse and flour, gums and resins, hardware, hides (raw), skins (raw), sugar, piece goods (grey and white), and tobacco (manufactured).



## Notes from the North.

### Ellesmere Port.

**F**URTHER developments at Ellesmere Port are foreshadowed by the Ship Canal Company, who are to construct another huge oil dock and swinging berth. The district is now the second largest oil depot in England. The equipment at Ellesmere Port enables 700 tons of oil an hour to be discharged.

### Proposed Peel Dock.

Peel Commissioners, Isle of Man, have had under further consideration the question of the proposed Peel dock scheme. The clerk intimated that his Excellency the Governor of the Island wished to have the plans of the proposed dock from the Harbour Board before meeting the proposed deputation from the Commissioners. Mr. W. Jenkinson (the Chairman) said one of the greatest difficulties in the way of the scheme was dock authorities at Barrow who would reduce their fees to zero, if necessary, so as to help their unemployment problems and to keep the I.O.M. steamers there for winter harbourage. It was decided to press for an interview with the Governor as soon as could be available.

### Interesting Facts about Mersey Tunnel.

Mr. B. H. M. Hewett, in an address at Liverpool, said that two million cars are expected to pass through the new Mersey Tunnel annually, and in the normal way it will be able to cope with 3,000 an hour. The new tunnel was the largest under-water tunnel ever attempted, the next largest, the Holland vehicular tunnel at New York, being only about half the size. So exact was the work that when the headings from Birkenhead and Liverpool met under the river in April, 1928, the lines of the tunnel met within 5/16th of an inch, and the levels were within half an inch. To ensure adequate ventilation and the reduction of carbon-monoxide fumes from motor car exhausts to a minimum, 4,000,000 cubic feet of air would have to be passed through the tunnel every minute from six ventilating plants. The tunnel would be 2.93 miles long, so that a car going through at 15 miles an hour would take 8½ minutes to pass through. The estimated cost of the constructional work was £4,700,000 and 70 per cent. of the work was now done. About a million tons of rock and so on had been excavated and 30,000,000 tons of water raised; 240 tons of explosive, 76,000 tons of cast iron lining and 263,000 tons of concrete had been used.

### New Facilities for Oil Trade at Preston.

The various petrol storage depots on the Preston Dock estate are increasing their capacity so as to take larger cargoes. It is understood that about 8,000 tons additional tank storage is about to be erected. Altogether the distribution of petrol from Preston Dock is becoming a big industry. The arrival and departure of large vessels at Preston Dock is taken very much as a matter of course nowadays, but note can very justifiably be made of three tank vessels which have been here, within a week, all delivering petrol. Collectively they discharged about 10,000 tons.

### Northern Harbours Exhibition.

Preparations are being made for the 1931 Northern Harbours and Navigation Exhibition, at Kiel. Liverpool Corporation has already received a letter from Ausstellungs-Gesellschaft, Hamburg, requesting the Corporation to participate in the exhibition which is to take place under the protectorate of the cities of Kiel and Libeck. The Corporation has referred the matter to the Mersey Docks and Harbour Board.

### Three Months Ship Repair Job.

There is some elation on Merseyside at the success of Messrs. Harland and Wolff, Ltd., Bootle, in securing the contract for the alterations to the s.s. "Lapland," because it was obtained in open competition against the leading Continental firms. The work will involve the employment of over 1,000 men for three months, and it is a matter for congratulation.

### Improving the Port of Lancaster.

The Lancaster Corporation have appointed a sub-committee to discuss with a deputation from the Commissioners of the Port of Lancaster, the question of improving the port and securing a grant in aid of such work from the Unemployment Grants Committee.

### Dock Stations Demolished.

The Liverpool Overhead Railway Company are dismantling two of their old dock-side stations, the Sandon, which has not been used for traffic for over thirty years, and the Langton, which has been closed for over a score of years.

### Liverpool Port Warehouses.

The Spanish Government recently sent a representative to Liverpool to inquire into the system of free warehousing facilities in the port, representations having been made by the Liverpool commercial interests that certificates of origin for non-European goods shipped from Liverpool to Spain be issued locally. The prospects of this being done are said to be good.

### Clarence Dock Power Station.

Clarence Dock Power Station Special Committee of the Liverpool Corporation has accepted the following tenders:—Messrs. Babcock and Wilcox, Ltd., Babcock House, Farringdon Street, London, to supply and fit hydraulic couplings on the forced and induced draught fans being supplied by them to the Clarence Dock Power Station at a cost of £4,423; Messrs. John Spencer, Ltd., Globe Tube and Engineering Works, Wednesbury, for the supply and erection at the Clarence Dock Power Station of equalising pipes and pipes of the No. 2 turbine amounting to £1,580; Messrs. Markham and Co., Ltd., Broad Oak Works, Chesterfield, for the supply and erection of chimney drainage pipes for £2,371.

### Damage to Embankment.

The Wallasey embankment has suffered rather severely during the recent north-westerly gales, accompanied by high tides. Some holes have been made sufficiently large enough to cause anxiety. Of course a breach in the sea-wall might mean the flooding of the low-lying land, almost to Moreton village.

### Anglesey Sea Wall.

The Surveyor of the Anglesey County Council has prepared a plan for a proposed sea wall 150 yards long at Trearddur Bay. It is proposed to construct the wall in stonework surmounted with a heavy concrete coping which will act as a kerbing to a 10-ft. footway or promenade placed behind the wall. This will be surfaced with tarred macadam to prevent water getting behind the sea wall.

### Sand Subsidence at Fleetwood.

There was a considerable subsidence of sand at the Fleetwood quayside recently. In a few days many hundreds of tons of sand were washed away by the tides, resulting in a cavity about 60-ft. across and 30-ft. deep. Two tracks of railway line in the harbour sidings were left without ground support for several yards. All the rotted wooden planking which was responsible for the subsidence was replaced. Over 2,000 tons of filling-up material was required to replace that which was washed away into the River Wyre by the tides.

### Speeding-up at Fleetwood.

Fleetwood Fishing Vessel Owners' Association have made an experiment in the landing of fish by electric power at Wyre Dock. A 3 h.p. electric winch was fitted by the side of the fish dock and the catch of the trawler "Arian," amounting to 1,200 stones, was landed in a short time. The trawler belongs to the New Dock Co., at Fleetwood. Whereas normally half a dozen men are required to haul up the baskets of fish which weigh about four stones, from the fish rooms, two men were sufficient with the electric winch, which is capable of lifting several hundredweights. It is anticipated that the use of the machine will result in a considerable speeding up of the landing of fish.

### Order for Three New Bridges.

The Mersey Docks and Harbour Board has placed an order for the supply and erection of three rolling bascule bridges at Liverpool with Messrs. Dorman, Long and Co., Ltd., of Middlesbrough and London, the inclusive price being £96,969. Two bridges will carry railway and road accommodation and have openings of 70-ft. 3-in., whilst the third will have road accommodation only and an opening of 51-ft. Work on these bridges will start immediately and the contract time for completion is nine months. All the steel employed, approximately 1,600 tons, will be of entirely British manufacture.

### New Fleetwood Ferry.

The Fleetwood-Knott End Ferry over the river Wyre is receiving consideration by the Fleetwood Urban Council, and plans with estimates of costs for improved landing facilities on both sides of the river have been submitted by the Surveyor (Mr. W. Melville). A scheme for the Knott End side has been provisionally approved for submission to the Unemployment Grants Committee, and it has been proposed that a scheme for the Fleetwood end should be placed before a firm of consulting engineers for report.

*Notes from the North—continued.***Shipping Pool.**

Six of the greatest passenger steamship companies on the U.S.A. and Canadian services have pooled their ships and now jointly advertise their services from Liverpool, London, Southampton and Glasgow. The six firms which are now co-operating to keep out foreign competition on the North Atlantic services are:—Cunard (17 liners), White Star (13 liners), Canadian Pacific (11 liners), Anchor (5 liners), Red Star (3 liners), Atlantic Transport (3 liners). The arrangement between the companies has for its object the elimination of costly competition by running one ship weekly from Liverpool instead of the usual two. This is a reply to the recent combination of the North German Lloyd and Hambourg-Amerika Lines. The agreement between the six firms concerned was reached some little time ago at a meeting of the North Atlantic Conference which meets periodically to fix passenger and freight rates for the lines operating on the North Atlantic between Europe and America.

**Ship Canal Landmark.**

On the banks of the Manchester Ship Canal, the Co-operative Wholesale Society has just erected a tea warehouse which will have an output of at least 445,000-lbs. of tea per week. The frontage of the building extends 142-ft. along the Ship Canal and presents a facing of white concrete which will make a dominant note in the district. When flooded with light at night it will be a landmark of distinction. Approximately the floor area of the warehouse is nearly 90,000 square feet, the ground floor area of the main building being 16,860 sq. ft. It has a depth of 186-ft. and will give employment to a large number of people. The establishment of the warehouse on the Manchester Ship Canal is an event of considerable interest in the commercial world. It will provide facilities for the distribution of tea among the people of Lancashire, Yorkshire and the neighbouring counties on lines that should quickly develop the importance of Manchester as a tea centre.

**Ribble Training Walls.**

Preston Corporation has decided to promote a bill in the present session of Parliament to authorise the construction of training walls and the heightening of the existing north training wall in connection with the Ribble Navigation undertaking and the compulsory acquisition of lands therefor.

**Wallasey Ferries.**

Wallasey Corporation is about to invite tenders for a new ferry steamer to replace the "Royal Iris." This boat and her companion ship, the "Royal Daffodil," have been on the service since 1906. Rather than re-boiler and reconstruct the vessels at an estimated cost of £17,500 each, the Ferries Committee decided that the best course would be to replace the "Iris," and, if found necessary, after a further survey, the "Daffodil" also. The "Iris" and "Daffodil" cost £21,500 each. The new steamer, or steamers, which it is thought will cost £43,000 each, will be of shallower draught so as to be more suitable for the New Brighton service, with low water landing at the pier. It was largely because of the light draught of the "Iris" and "Daffodil" that they were chosen to take part in the memorable Zeebrugge raid on St. George's Day in 1918. The shell-pierced funnel of the "Royal Iris" still occupies a prominent position near the river wall at Seacombe.

**Suggested Extension of Canal.**

A proposal has been made at Bolton to bring a branch of the Manchester ship Canal direct into the heart of Bolton and secure for the town a cheap freightage rate.

**Caernarvon Harbour Trust.**

According to the monthly report of the Caernarvon Harbour Trust, receipts for the month of October included:—Harbour dues £95 6s. 5d. and wharf, yard and office rent £107 9s. 10d. The comparative statement showed that the amount received from July 1st, 1930, to October 31st, 1930, was £597 18s. 3d., as compared with £487 17s. 9d. during the corresponding period in 1929. Dues received during October were:—Imports £71 7s. 9d. (as compared with £53 12s. 2d.); exports £6 8s. 8d. (as compared with £21 15s. 3d.); tonnage and dock tonnage £17 10s. (as compared with £10 13s. 3d.); passing tolls, 9s. (as compared with £3 12s.); yards, wharves, offices, etc., £140 19s. (as compared with £177 0s. 3d.). Total from July 1st to October 31st, £834 12s. 8d., as compared with £754 11s. 1d. for the corresponding period last year. The decrease in slate shipments continued. In his monthly report the Superintendent (Capt. Richard Jones) states:—"Owing to the s.s. 'Seiont' being on the slipway undergoing repairs, it was not possible to overhaul the bar buoys, and on account of the unsettled weather the channels were too rough to be surveyed with a motor boat."

**Birkenhead's Shipbuilding Resources.**

Owing to the depressed conditions in the Merseyside shipbuilding yards, the hope is cherished that the order for the new Cunard liner will be placed with a Mersey firm. Really there is only one that could tackle it, Messrs. Cammell Laird and Co., of Birkenhead. At the Birkenhead Chamber of Commerce, Councillor R. P. Fletcher said the Cunard Co. had its natural home on the Merseyside and here was one of the best equipped shipbuilding yards in the kingdom. Messrs. Cammell Laird's had spend tens of thousands of pounds in bringing the yard up to the highest standard of modern requirements. They had ten berths, two of which were able to accommodate a vessel a thousand feet in length. They had built every type of commercial vessel on the sea and were fully competent in every way to build a ship that would regain the "blue riband" of the Atlantic. The chairman, Mr. W. T. McIvor, said it could be taken for granted that the Cunard Co. knew all about the facilities at Birkenhead. Birkenhead had water deep enough for any draught that a thousand foot ship would draw, and a fitting-out basin with a gate opening of something like 140-ft. The new Cunarder might have a beam of 100 or 110-ft. but not more. In any case, Messrs. Cammell Laird's built the "Rodney," which had a beam of 120-ft., so that there was no fear of insufficient space to get the ship in. It might be pointed out, however, that on its south side the fitting-out basin was only 1,010-ft. and one could not push a ship of that size into a space approximating to her own length. It would be necessary to extend the south side, but that was not a difficult engineering feat nor one that would be unduly costly. Even so, whether the new Cunarder went to the Tyne or Clyde, it was likely to involve a far greater expenditure with regard to accommodation on the building site than at Birkenhead.

**Mersey Sewage Scheme.**

To discuss problems arising from the discharge of sewage into the River Mersey and estuary, a conference of Merseyside local authorities may be held shortly. It may be remembered that about six months ago Mr. L. A. P. Warner, general manager of the Mersey Docks and Harbour Board objected to a £44,000 sewerage scheme at Moreton in the Wallasey area on the ground that it provided for the discharge of crude sewage from a large area into the Mersey from a sewer which did not have sufficient capacity. Mr. Warner pointed out that in the opinion of experts the crude sewage discharge into the Mersey was sufficient to cause serious pollution of the tidal waters and that continued discharge constituted a grave danger to the conservancy of the river. The proposed inquiry into the Moreton scheme was postponed. When Wallasey objected to the postponement, Mr. Warner wrote to the Ministry of Health stating that as the discharge of the sewage affected the navigation of the Mersey and the use of the docks, the consent of the Board was necessary before the scheme could go forward. The proposed scheme, he said, meant that a great proportion of the crude sewage would be carried by strong tidal currents into the upper estuary. He said that the mutual co-operation of local authorities and of the Ministry was necessary to deal with the difficulties. The Ministry of Health, not long ago, wrote to the Liverpool Corporation to suggest a consultation between the parties concerned. The appointment is now proposed of technical experts to make a joint report on the Dock Board's expert report, and on the general question. The Liverpool Town Clerk has forwarded a copy of the expert's report with a request for a joint report to Dr. Anderton, of Manchester; Professor Lewis, of Liverpool University; and Professor Roberts, the City Analyst. When this report is received the conference of the authorities will probably be held.

**Liverpool Dock Labour Age Limit.**

One of the grievances of the Liverpool dockland is the dismissal by shipping firms of dockers when they reach the age of 65. Captain Jones, of the Cunard Line, who is in charge of the wharfingers' department at Huskisson Dock, states that some few months ago the company adopted the policy of employing nobody whom they knew to be 65, because at that age they were eligible for the old age pension and if they were allowed to keep their jobs it would mean fewer vacancies for the younger men. It had all to be done as gradually as possible so as to inflict no hardship. In his opinion it was one of the primary steps employers should take to help solve the unemployment problem.

**Preventing Injury to Dock Gates.**

Mersey Docks and Harbour Board have adopted a revised code of bye-laws for preventing injury to dock gates, training banks, etc., by reason of the speed of vessels navigating the River Mersey and the sea channels and approaches.



*Notes from the North—continued.***New Pontoons Required.**

Wallasey Corporation Ferries Committee has just invited tenders for the construction and delivery at Seacombe of eight mild steel pontoons—approximately 90-ft. by 11-ft. by 6-ft. Early delivery of the first unit and of the remainder in rapid sequence was stipulated as necessary. The pontoons are required for the repair of the Wallasey landing stages.

**Fleetwood Docks: Ban on Motor Lorries.**

Action is being taken by the railway companies at their private docks to prevent the loss of traffic to the motor haulage companies. The situation at Hull, where the London and North Eastern Railway Company decided not to allow other than private cars and taxicabs on the docks after October 31st, has its counterpart at Fleetwood. The London, Midland and Scottish Railway Company owns the whole of the dock estate at Fleetwood, which includes the fish docks, fish market and all roads leading thereto. Railway lines run alongside the fish market, and it is extremely difficult for fish to be loaded on to motor lorries for conveyance by road transport to its destination. The railway company maintains that the dock estate is their private property and, naturally, they can prohibit motor vehicles using their private roads. The prohibition by the railway company of vehicles not licensed by them going on to the docks at Fleetwood has long been a source of comment and is said to be detrimental to the expansion of the fishing industry. Each day, particularly during the early part of the week, a large number of lorries and vans of all descriptions line Dock Street in the vicinity of the dock entrance awaiting fish. They are not permitted to go across the level crossing, near where the railway police office is situated, but have to wait until the fish is brought to them by a carter who holds a licence from the railway company. The carters are only supposed to cart fish from the fish stages to those vehicles which come from within a certain radius of Fleetwood, as the railway company hold that fish going any distance should go by rail and not by road transport. This necessitates the fish being handled twice. According to an official of a Wyre Dock fish trade association, the practice of the railway company is very detrimental to the fishing industry and, no doubt, prevents a small order trade being done, while it also acts against the distribution of fish by hawkers. There is opportunity for developing a big trade by light vehicles, but as these cannot go on the docks and get the fish from the fish stages and have to pay someone else to deliver it, the extra overhead charges militate against any developments in this direction.

**Master Portage Rates.**

Mersey Docks and Harbour Board have adopted a reduced master porters' rate in respect of empty palm oil or similar sized casks. The rate was laid before the Ministry of Transport on the 14th November, and will be deemed to be part of the Bye-Law at the expiration of one month from that date, if no objections are made.

**Foreshore Shingle.**

One of the Lytham St. Anne's associations is pressing the Town Council to sell shingle from certain points of the beach to contractors. Mr. J. B. Lever, the Secretary, stated at the annual meeting there was no reason why Lytham should not sell shingle from the foreshore, as it was being sold at Fleetwood. The association had taken outside opinion on the matter and were satisfied that the sale of the shingle would not in any way imperil the "hulking," but would cleanse the foreshore as well as add to the borough revenue. "The suggestion has been made and the Town Council have not seen fit to adopt it," said Mr. Lever, "although it was admitted, in an interview with me, that the shingle was being driven down the coast and was thus being lost in the Ribble at the south end of the borough for all time. The fact disposes of the argument that the shingle ought not to be taken away because it might at some time be required for the building of a promenade. The shingle is going and the borough is not getting the benefit."

**Improving the Port of Fleetwood.**

Shortly after the announcement that a fleet of ten vessels owned by a Fleetwood company was being offered for sale owing to poor facilities at Fleetwood, the London, Midland and Scottish Railway Company, as owners of the docks, reduced the dock charges for fishing vessels, as a result of the de-rating of dock and harbours under the Local Government Act of 1929. Rebates on dock dues for general traffic handled at the port have also been offered. It is stated that reductions

correspond to the amount of relief in rates received by the Railway Company, who are the controllers of the Wyre Dock and Harbour. Dock dues, etc., for trawlers are reduced by 7½ per cent. The reduction will mean about £5 per trawler per year, so that reckoning the fishing fleet at the port at 160 vessels, the total benefit to the owners will be about £800 a year. Fleetwood trawler owners are pressing for the lowering of the dock sill at the entrance to the Wyre Dock by several feet, better channel facilities by means of more dredging, less rental charges, reduction in craneage fees and more economical towage charges. Working arrangements between the harbour authorities and trawler owners in regard to the patent slipways at Wyre Dock, used for hauling ships out of the water for repairs, etc., have been revised with the object of securing mutual benefit. Up to the present it has not been possible for any of the slipways to be rented other than for a whole day of 24 hours. This has proved expensive in many cases, as the repairs only took a few hours, but the whole 24 hours had to be paid for, while other owners were prevented from placing their ships on the slipways. In future the slipways may be rented for any part of the 24 hours with a minimum of six hours.

Some weeks ago a period of extremely low tides prevailed at the port, and trawlers, other than the coastal "crabbers" of shallow draught, could not leave the dock loaded with coal, owing to an insufficient depth of water on the dock sill at the entrance to the Wyre Dock. The inconvenience caused to owners by having their ships towed to the pier at the North End, and there be bunkered, was colossal. That is the one cause of grievance. It is also held by trawler owners that the slipway facilities do not meet with the requirements of big trawlers. As a consequence much delay was caused in carrying out the necessary repairs at short notice. The most important need is the lowering of the dock by several feet.

**New Trade for Ellesmere Port.**

Recently the s.s. "Bellflower" drew alongside the new Ellesmere Port wharf of the Manchester Ship Canal with two huge aeroplanes on board. These were handled with the utmost ease and despatch and conveyed to the Hooton aerodrome and accommodated in one of the large hangars for assembly. These two planes had come from the Ford works at Dearborn and are the first step in the direction of establishing a new industry at Ellesmere Port and Hooton. Mr. W. G. Higgs, the European aircraft manager for Mr. Ford, superintended the work of housing the machines, and in an interview he said:—"We want to ship the planes in bulk after having flown them from Dearborn to Boston. We shall then assemble them in England, test them out, and fly them to their destination. The trouble was finding a suitable site for this far-reaching project. I searched all over England and closely examined every available site. I went to Southampton, Hull, London, Cardiff, Bristol, Portsmouth—everywhere, and finally came to the conclusion that the facilities provided at Hooton were far superior to anywhere else in England. But coupled with this there are the splendid facilities at Ellesmere Port for docking and quick transit. Our machines can easily be put on board a vessel which can come right up the Manchester Ship Canal to Ellesmere Port, and there unload at the new dock which has just been constructed at a cost of a quarter of a million. It is an easy matter transporting the planes from the docks to the aerodrome, for there is a long, wide and unencumbered road with easy access to the aerodrome." Hooton certainly has unique facilities in aircraft manufacture, and in addition there is the deep-water base at Eastham which provides the possibility of a suitable seaplane base.

**Tender Accepted.**

The Mersey Docks and Harbour Board has accepted the tender for galvanised steel wire ropes submitted by the Whitecross Co., Ltd., of Warrington.

**Manchester Ship Canal Traffic.**

Traffic receipts of the Manchester Ship Canal Company for the month of October were £93,198, or £17,674 less than in the corresponding month of last year. The total for the ten months of this year is £1,076,089 and the decline in the period from 1929 figures is brought up to £114,591. The gross receipts to October 31st have been affected by reductions in the company's tolls arising out of the Derating Act. Against the reductions in receipts the company have savings in local rates and from decreases in other expenditure to October 31st, which amount approximately to £40,000. The saving of £40,000 in rates, etc., is thus an offset to the ten months decrease of £114,591.



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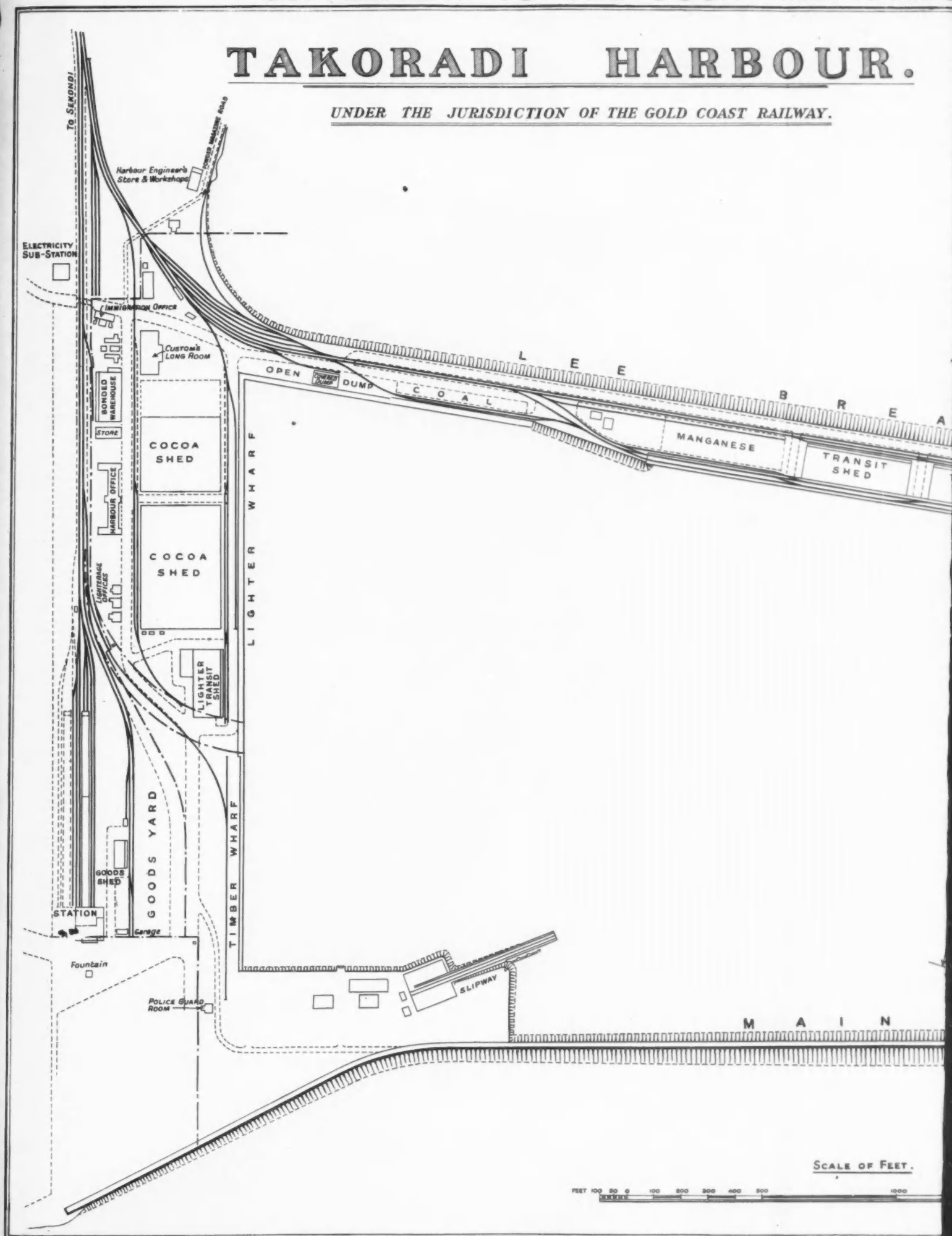
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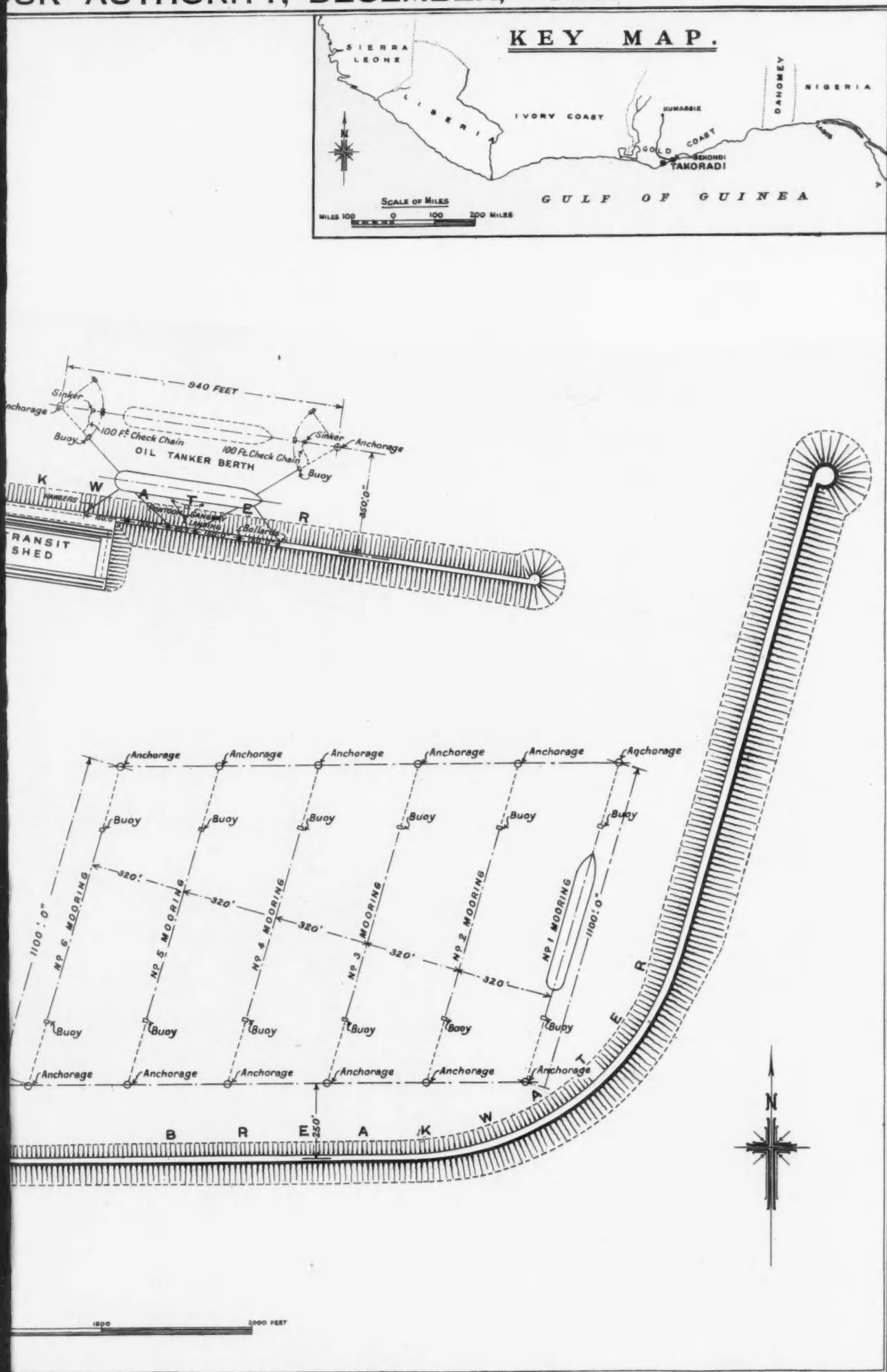
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# TAKORADI HARBOUR.

UNDER THE JURISDICTION OF THE GOLD COAST RAILWAY.



OUR AUTHORITY, DECEMBER, 1930.





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## The Port of Ghent.

(Translated from the French).

Historical Sketch. Construction Works. Waterway Access. Navigation Routes. Statistics.

(Concluded from page 8).

### V.—The Darses (Wet Docks).

The "Darse Nord" has a length of 500 metres and a width of 250 metres, so that the water surface covers an area of 125,000 sq. metres. The anchorage is 8.50 metres. The quays cover an entire length of 1,150 m., with a width of 125 m. The south quay is equipped with six turning electric cranes, which can be travelled along the quay, and of five tons capacity. The roof accommodation shelters four rail tracks. The east quay has been equipped by a private undertaking on hire and is served by two conveyors and seven 5-ton cranes. The mole between the Darse Centrale and Darse Nord is equipped with three cranes of 5 tons specially intended for trans-shipments from vessels lightering and conversely.

The Darse Centrale is also 500 metres in length, but its width is 290 metres, so that its water surface covers 145,000 sq. metres. The anchorage is 8.50 metres. The total length of the quays is 1,210 metres. The south quay is equipped with six electric cranes of 2½ tons, while on the north quay eight 5-ton cranes are in service. At the east quay two conveyors of 10 tons have been installed by a private industrial undertaking.

The Darse Sud, projected during the time of the war, is now in course of completion. Its length is to be 500 metres and its width 250 metres.

The construction will be completed towards the month of November, and the quays will be provided with the requisite rail track. The equipment will comprise 16 cranes of 2 tons having a 15 metres reach over the water and one of 34 metres landwards.

### VI.—Dry Docks.

The dry docks, two in number, are situated on the left bank of the Avant Port. The dimensions are as follows:—

Dry Dock 1.—Entrance situated at 4.45 metres below the water level. Length measured up to edge of mitre-sill 75.85 metres, width 11.00 metres.

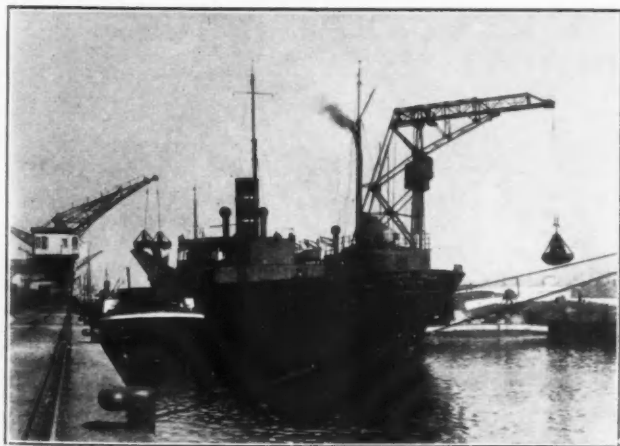
Dry Dock 2.—Entrance situated at 5.45 metres below the water level. Length measured up to edge of mitre-sill 130.00 metres, width 13.00 metres.

Without delay the construction of a third dry dock will be undertaken intended to provide access for vessels of large tonnage frequenting the port.

It will be located on the former arm of the Terneuzen Canal on the Isle of Langerbrugge.

The dimensions of this new dock, as already fixed by the agreement between the town and the State, are as follows:—

Working length, 210 metres; width at entrance, 26 metres; at sill, 7.50 metres, below the water level of the canal.



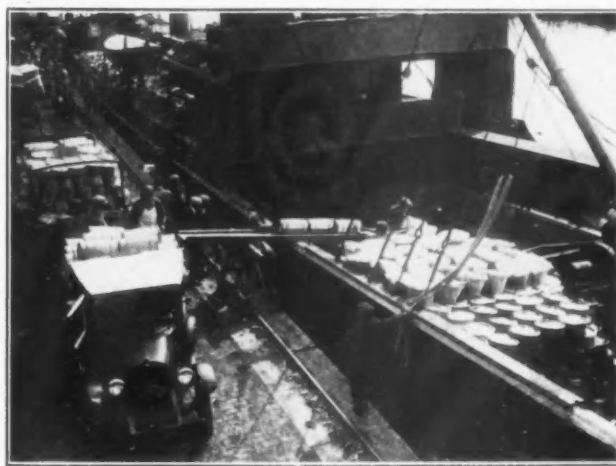
Nouveau Bassin. Left Bank. Transhipment of Coal.

### Extension Schemes.

The boundaries envisaged in 1894 by the promoters of the general lay-out of the present seaboard erections are now greatly exceeded. In point of fact the basins only recently completed are of too narrow dimensions to accommodate the very heavy traffic existing, and it will be necessary within the very near future to proceed to further extensions,

Hence the Municipal Council has planned and submitted to the competent authorities a grand general scheme which will ensure for the port of Ghent practically unlimited possibilities of development.

In the first place, the construction of a third large lock at Terneuzen is contemplated, which will give access to the canal for the largest cargo boats. This lock will have a length of 200 metres, a width of 26 metres, and a depth of 9.50 metres above bottom.



Outer Harbour. Fruit being exported.

Secondly, the dimensions of the Dutch section of the canal will be raised to keep pace with the capacity of the new lock at Terneuzen by deepening it to 10 metres and widening it to 57 metres at the water level.

On Belgian territory the canal will also be deepened to 10 metres and its width raised to 200 metres. On this section of the canal, and more particularly on the right bank, quay walls will be constructed, while also rail tracks will be laid, passing from Oostacker to Selzaete and skirting the canal for a distance of 400 metres. The annexed grounds between the canal and the rail track are intended to allow of a further development of the industries, already so varied, along the left bank.

To the north-east of the already existing erections it is intended to construct a spacious basin canal of 300 metres width, which, joining up directly with the Terneuzen Canal at 200 metres above the bridge of Langerbrugge, will then extend southwards over a distance of 2,400 metres.

This basin will cover a total area of approximately 72 hectares and will provide an extension of new quays over 5,175 metres.

The anchorage provided is 8.75 metres, but will ultimately be increased to 9.75 metres. The construction of a first 900 metres section of the quays is planned for the opening of 1930.

In addition plans are afoot for constructing at Langerbrugge a large dry dock, which will give access to all vessels capable of entering the port of Ghent.

The dimensions of this dock will be as follows:—Length 210 metres, width 26 metres, depth of water above bottom 7.50 metres. By way of conclusion reference may be given to the scheme for a canal from Calloo (Antwerp) to Roodenhuyze (Ghent), which, if it is on an adequate scale, will link up the two large Belgian ports and complete them very satisfactorily.

The undulating bed of the Bas-Escaut (Lower Scheldt) between the two towns is 20 km. longer and is navigable only at high tide.

The canal will also prove highly serviceable on the day when the large canal Escaut-Meuse-Rhin (Scheldt-Maas-Rhine) is realised, and, in fact, it will form a kind of natural prolongation to the great Rhine port, which is essentially that of Ghent.

### IV.—Routes of Access to the Port of Ghent (their Description).

Besides the Terneuzen Canal, which is par excellence, the maritime way connecting Ghent with the sea, and to which reference will be made later, there are in existence two other routes by which to reach Ghent from the sea.

*The Port of Ghent—continued.**I.—The Scheldt.*

There is, first of all, the natural river route of the Scheldt, although the wide detour around the Pays de Waes lengthens the journey from Ghent to Antwerp to approximately 80 km. The Scheldt passage is, however, only an internal waterway, the anchorage in which varies with the ebb and flow of the tide. The normal amplitude of the tides, which at Antwerp is 3.50 metres, falls to 1.80 metres below the lock of Ghent Bridge.

*II.—The Canals from Ghent to Bruges, Ostend and Zeebrugge.*

A second way of reaching the sea from Ghent is the Ghent-Bruges Canal of, roughly, 45 km. in length and with an anchorage of 3.10 metres for the summer tonnage.

The improvement works carried out on this canal have resulted in making it accessible for Rhine vessels, 100 metres long, 12 metres wide, and of 2.50 metres displacement, while at the same time making it possible for Walloon barges to cross all along its length, even though their tonnage is the highest (40 metres long, 5 metres wide and of 2.10 metres displacement).

The normal profile of the canal allows of a width of 8 metres at the water surface.

Within the shunt docks, which are 200 metres long, and where even Rhine vessels can pass each other, the width at the water level is 26 metres, and extra width is provided at curved sections. The present bridges have an arched opening of 12 metres, but when reconstructed will have one of 30 metres.

Between Bruges and Ostend there is also a canal which, though it has recently been improved, is accessible only for inland vessels.

But, on the other hand, there is a maritime canal which connects Bruges to the port of Zeebrugge. Its dimensions are: width at water level 22.00 metres, width at water line 70.00 metres, and water depth 8.00 metres.



*Nouveau Bassin. General View.*

*III.—The Terneuzen Canal.*

The principal maritime way of Ghent is the Terneuzen Canal.

The canal from Ghent to Terneuzen was begun in the years 1825 to 1827 during the Dutch suzerainty in order to put Ghent in direct communication with the Scheldt and to allow of an easy outlet to the sea in the event of floods or inundations in the waters of the Lys or the Scheldt. The canal, which originally had a depth of only 4.20 metres, has been considerably improved by the Belgian Government between 1870 and 1878, and the anchorage has been increased to 6.50 metres.

The extensive operations of straightening and deepening the canal, which have made it one of the leading artificial waterways of the world, are now entirely completed. Their execution has required a period of 11 years, from 1900 to 1911.

The Terneuzen Canal, in its present finished condition, has from the bridge of Muide at Ghent up to the jetty-heads of the Avant Port at Terneuzen a length of 32.820 km., including 17.470 km. in Belgium and 15.350 km. in Holland.

Between Ghent (Tolhuis Lock) and the point where it discharges into the Scheldt, the canal is crossed by ten bridges, or by only seven if counted from the new basins at Meulestede.

In its course through Belgian territory the canal has a width of at least 97 metres at the upper surface. The width at the water level is uniformly 50 metres, except at the Selzaete crossing, where the canal gutter is 34 metres wide and the water depth is 8.75 metres.

Along the Dutch section of the canal the width in the straight courses is only 67 metres, and the width at the water level 24 metres, with a water depth of 8.75 metres. Shunt docks have been erected at Sas de Gand, at Sluiskil and in the rear port of Terneuzen.

All the bridges constructed over the Terneuzen Canal have navigable archways of 26 metres useful width.

The archway of the bridge giving access to the dock is of 17 metres width.

The bridges of Langerbrugge, Terdonck, as well as Selzaete rail-bridge, possess four navigable archways, two for ocean vessels and two for inland vessels.

These latter have a width of 14 metres and a height of from 3.50 metres to 4.50 metres, and allow to pass through their archways barges the height of which does not exceed 4.50 metres.

For the rail-bridge of Rieme and also for the road-bridge at Selzaete the type adopted by the Ponts et Chaussées is that known as the "bascule Scherzer."

The canal race has been rendered uniform between Ghent and Terneuzen as long ago as October 1st, 1908. As the result of making the water of uniform level, the water surface has been lowered by 0.20 metres in Belgium and raised by 0.25 metres in Holland. The lockgates at Sas-de-Gand remain open; they are closed only very rarely in the event of flood or the pollution of the waters coming from the Lys or the Scheldt.

The locks at Sas-de-Gand are three in number, the smallest having a water depth of only 4.20 metres over the mitre-sill and 12 metres width, and therefore being serviceable for small boats only. The other two locks are maritime ones. The larger has a working length of 200 metres, with a width of 26 metres and a water depth of 9.50 metres over the mitre-sills, while the second is of 12 metres width, 110 metres working length, and 6.65 metres depth.

The sill locks at Terneuzen also number three.

The narrowest, situated on the eastern arm, is 8 metres wide and can afford passage to only very small vessels. The one by the western arm is 12 metres wide and 90 metres long, with a depth at mean low tide of 5.60 metres.

The new maritime lock, thrown open officially for navigation on February 15th, 1910, has a working width of 18 metres and a length of 140 metres. Taking account of the distances between the outer gates marking the ebb and flow of the tide, this erection can afford access to steamers of a length as great as 178 metres. The water depth above the mitre-sill upstream from the lock is 8.35 metres below the canal water line and the mitre-sill on the downstream side was specified as 0.93 metres below the upstream mitre-sill, thus ensuring an anchorage of 5.12 metres below the average level of the ebb tides in the Scheldt and allowing of access at every high tide for vessels whose water draught does not exceed 8 metres.

The artificial erection, including locks and bridges, are operated electrically and lit with lamps of 25 candle-power, distributed at intervals of 150 metres along the straight sections and of 75 metres along curved sections lining the whole length of the canal from Terneuzen to Ghent.

In order to form an estimate of the progress made it will suffice to recall that in 1875 the dimensions of this canal were as follows:—For the first race: 8.00 metres width at bottom, 30.00 metres width at the water level and 4.40 metres anchorage. For the second race: 12.20 metres width at bottom, 40.60 metres width at water line, and 4.20 metres water depth.

Under present conditions the Ghent-Terneuzen Canal forms one single race, as the lock gates of Sas-de-Gand remain normally open.

By the Law of March 19th, 1927, the canal banks as far as de Selzaete rail-bridge and over an area of 300 metres on either side of the canal have been incorporated in town lands of Ghent.

*V.-VI.—The Port of Ghent, its Discharge-ways, its Background, its Services.*

It is hoped to see ultimately an equitable agreement between Ghent's Northern neighbours and itself, specifying regulations which will be mutually profitable for both countries, who are equally interested in restoring good neighbourly relations and an "entente" of reciprocity.

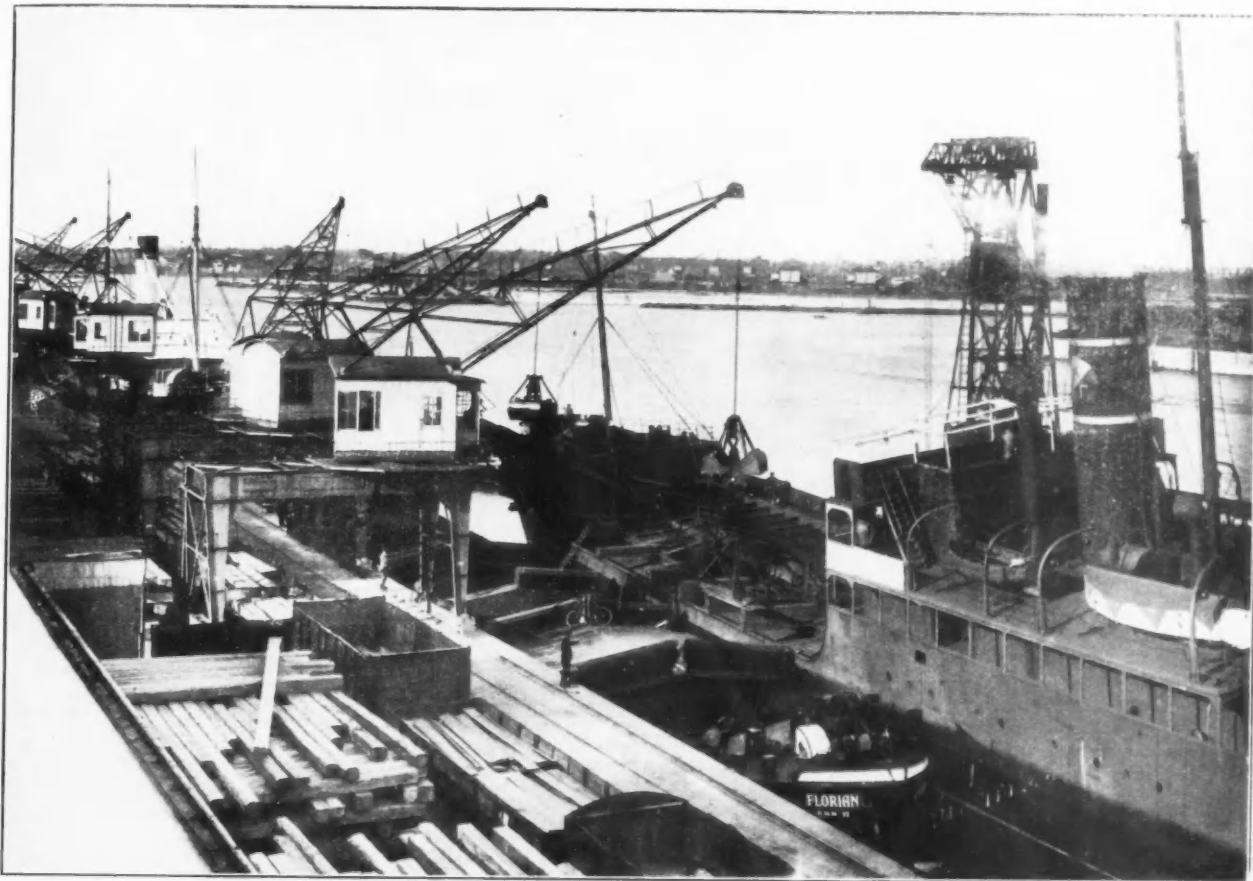
The exceptionally favourable situation of Ghent geographically provides for its outstanding resources for the facilitation of transport.

Two large and beautiful rivers unite here after having received tributary waters of less importance which ensure for them a constant supply of water. The long and capricious route, navigable over its entire length, intersected by numerous canals and side branches, which multiply its beneficial services and shorten distances; waterways and turnpike roads of the first class converge to its banks, which are equipped with quays and unloading stages to meet requirements.

Their respective basins unite directly at the port; that of the upper and lower Scheldt at the Bassin de Commerce via the Canal de la Pêcherie and that of the Lys at the Avant Port via the Canal de Raccordement.



## *Port of Ghent.*



*Nouveau Bassin. Left Bank. Transshipment of Coal, 1925.*



*Nouveau Bassin. Pit-props awaiting disposal.*

*The Port of Ghent—continued.*

In this way, by its possession of a very elaborate netway of navigable routes, the port of Ghent is put in direct connection with all the Belgian ports Antwerp, Ostend, Bruges, Zeebrugge, Nieupoort, Selzaete, Termonde, Brussels, Louvain, as well as with the leading towns and industrial basins of Belgium, Holland, France and Germany.

Ghent possesses one of the largest and most beautiful water stretches for small boats, and few European ports can offer the same facilities for river navigation.

The outlets from the Port of Ghent by canals and rivers may be summarised as follows:—

**To the North.**—By the Hansweert-Wemeldingen Canal opposite the place where the Terneuzen Canal empties into the Scheldt, communication is established with the basins of the Meuse and Rhine and thence with the Low Countries and with the West and Centre of Germany.

**To the East.**—The Lower Scheldt, the Dendre, the Durme, which is channelled, Rupel and the various canals which empty into these, bring the Port of Ghent with the basins of the Centre, of Liège, of the North-east and East of France and with the industrial basins of Lorraine and Sarre.

**To the South and South-west.**—By the Upper-Scheldt, the Lys and their tributaries communication is established first of all with the entire flax district of the Lys, the industrial and mining centre of the Borinage and thereafter with the North of France, including the textile centres of Roubaix, of Lille, of Armentières, Tourcoing, Valenciennes and the mining areas of Lens and Hazebrouck to beyond Paris and towards the centre of France.

**Railways.**

As regards railways, Ghent forms the centre of a very elaborate netway of lines, excellently adapted to meet modern requirements, surrounding the port, radiating in every direction, and thus supplementing in a very satisfactory manner the topographical advantages of the capital of Flanders.

The railway systems which serve the Port of Ghent branch from two stations:—1, Ghent (goods), an annexe of the station of Ghent (east); 2, Ghent (maritime). The Ghent (goods) annexe serves the buildings and erections of the Bassin du Commerce (quays 1 to 11b).

It is reserved:—

**DEPARTURE.**

1.—For goods trans-shipped from steamer or vessel to a truck for transport by rail.

2.—For goods consigned to Ghent by water and deposited on the quays, in the warehouse or the public sheds awaiting transport by rail.

3.—For goods leaving the public warehouse, the Customs Bond Houses or annexes of these.

4.—Consignments of wood proceeding from any warehouses in the basin of the dock, of the quays and in the private sheds surrounding, provided no manual labour has been spent on them in the country.

5.—Goods proceeding from associated establishments.

6.—For goods destined for abroad which must be subject to reparations and are presented for stamping or marking by the Customs with a view to free re-importation; such goods to travel under Customs' control.

7.—For consignments of fruit to be exported, which it has not been possible to ship and which are trans-shipped into trucks or ferry boats for exportation *via* Zeebrugge.

8.—For goods carted from a warehouse and intended to complete a load with other goods arriving by water.

**ARRIVAL.**

1.—For goods intended for export by sea and not requiring to undergo re-assortment before being shipped, for which the forwarding agent has expressly indicated in the way-bill that the destination is to be Ghent (goods) Station.

2.—For goods arriving from abroad which have not cleared the Customs at the frontier station.

3.—For goods arriving from inland and addressed to Ghent (goods) Station under cover of a Customs' certificate to be verified and warehoused.

4.—For goods to be trans-shipped directly on an inland vessel and transported by water to destinations other than Ghent, for which the agent has expressly indicated in way-bill that Ghent (goods) Station is the destination.

5.—For consignments addressed to establishments associated with Ghent (goods) Annexe.

6.—For goods arriving from inland and intended to form a group in trucks standing in Ghent (goods) Annexe along with other goods subject to transport freight.

The goods which remain ungrouped and must be reforwarded to Ghent (East) are subject to an extra duty equal to the normal price of transport from Ghent (goods) to Ghent (East).

7.—For consignments intended to be stored in the public warehouse.

The carting service is organised at Ghent (goods) Station for goods declared at the Customs by the railway officials.

The Station of Ghent (Maritime) serves the erections of the Petit Dock (quays 12 to 15), of the Bassin au Bois (quays 16 to 19), of the Avant Port (quays 20 to 26a), of the Grand Dock (quays 27 to 41) and of the Darses (quays 42 to 74).

It is reserved:—

**DEPARTURE.**

1.—For goods trans-shipped directly from barge or vessel to a truck for dispatch by rail.

2.—For goods reaching Ghent by water and deposited on the quays of the town lands, in the public sheds and, temporarily, in the private sheds adjoining the Petit Dock roadways, awaiting despatch by rail, provided such goods have undergone no re-assortment before being transported.

3.—For goods arriving from associated establishments.

4.—For goods carted from a warehouse and intended to complete a load with goods arriving by water.

**ARRIVAL.**

1.—For goods intended for export by sea, not requiring any re-assortment before being shipped, and to be transported directly to a vessel, or, prior to being shipped, to be deposited on the quays, in the public sheds or on the grounds situated along the waterways.

2.—For goods to be trans-shipped directly to an inland vessel and to be transported farther by water.

3.—For goods intended to be stored in warehouses of the town. For such goods only the rates provided for goods of local traffic shall be applicable.

When such consignments cannot be shipped and whether they are reforwarded or not, local traffic rates will be substituted for the freight charges applicable to the original consignment.

In the event of reforwarding, local traffic rates and conditions will be enforced.

4.—Provisionally for the transport of material intended to complete the maritime erections of the new basins or for the construction of sheds to serve for the storing of goods arriving by an ocean vessel.

5.—For consignments destined for associated establishments.

6.—For consignments from the interior of the country and intended to complete the grouping of trucks in the station with goods of transport traffic.

Agents who forward goods intended for exportation by the Port of Ghent are obliged to indicate in the way-bill the number of the shipping quay and, if possible, the name of the steamer on which such goods are to be loaded.

The rail tracks serving the port erections cover a length of 177.400 kilometres, or:—1, at the Entrepôt 4.5 kilometres; 2, at the Petit Dock 8 kilometres, of which 1.500 kilometres are on quay; 3, at the Grand Dock 16.5 kilometres, of which 6.200 kilometres are on quay; 4, at Avant Port 8.4 kilometres, of which 2.200 kilometres are on quay; 5, at the Darses 60 kilometres, of which 5.500 kilometres are on quay.

In addition, there is in operation at the Ghent (Maritime) Station a ranging track where trucks, before departing, are classified into their respective trains and where trucks on arrival are examined before being shunted to their proper annexe.

This ranging-track, which covers an area of 50 hectares, has three large assorting sections and lines extending over 80 kilometres. The construction of an industrial roadway along the right bank of the Terneuzen Canal from the third wet dock up to the Selzaete Bridge at 400 metres distance from the canal is being projected.

By this admirable array of communication routes, Ghent, which is itself a centre of an agricultural and industrial country, is linked up with all parts of the European Continent.

On leaving Ghent the commercial and industrial produce may be distributed economically and speedily in Belgium, Holland, France, Central and Southern Germany, Alsace-Lorraine, Switzerland, Italy, Czecho-Slovakia, and the other States of Central and Eastern Europe as far as the shores of the Black Sea.

In virtue of these facilities possessed by the Port of Ghent for communicating with so extensive and opulent a hinterland, its services are of primary importance for every locality.

Towards the country to the rear the Port of Ghent forwards all the goods required, timber of the north, the minerals of Sweden and of Spain, the coal of England, the phosphates of Florida and of Algeria, the nitrates of Chile, the flax of Russia, the agricultural produce and, last but not least, the cotton of America.

The Port of Ghent—continued.

In return, the productions of its surrounding country converge within these basins in order to be re-shipped towards countries beyond the seas; the machinery from its workshops, the castings and rolled iron of Charleroi and of Liège, the coal of the Ruhr, the potage of Alsace, plants from its horticultural establishments and the threads and fabrics of its textile manufactures.

Ghent thus plays a very distinguished industrial role which will continue to develop from year to year. In the immediate environment of the port, the raw material received from abroad is handled and transformed.

Around the maritime station and the basins the vast land areas are in the possession of the Town of Ghent and are, therefore, put at the disposal of the industries which are steadily arising. These grounds, which occupy an area of 225 metres, look out over a wide chaussée equipped with railways, and, on the other side, to a canal which provides the water required for the machines and allows inland vessels to reach the banks of the factories.

Already, prior to the War, a large number of flourishing undertakings had arisen in the immediate vicinity of the basin; cotton factories, flax workshops, sawmills and factories for chemical products, artificial manures, refrigerating agents, coke furnaces, workshops for mechanical structures and petroleum depots.

Since the Armistice several large and new factories have been erected.

These buildings will render the extensive Farmari plains of value for a long period, although they have yielded nothing for a great number of years.

Since the annexation of the banks of the Terneuzen Canal the important industries domiciled on the left bank have served to enhance the value of Ghent as an industrial port still more.

When the railway between Oostacker and Selzaete is completed on the right bank new and extensive industrial grounds of great value will become available.

By way of exemplifying the richness of the port, the town demands by way of rent only a minimum sum for a contract of some duration.

Lastly, in the course of recent years the commercial services of the Port of Ghent have undergone further developments and, compelled by economic necessities, Ghent is looking around for fresh outlets.

Considerable efforts have been made to establish a dépôt and a market for cotton merchants, who would supply the raw material imported directly from the country of origin and by regular services to the great textile centres of Belgium in the first instance and thereafter to Holland, Westphalia, Alsace, the North of France, Switzerland and Northern Italy.

These efforts have been crowned with success. A quay of 2.5 kilometres in length has been specially set apart for the

traffic in raw cotton. Large public warehouses capable of containing more than 200,000 bales of cotton have been planned and erected according to the most modern principles. Ghent may congratulate itself on being the only port in Europe possessing sheds of the ideal type in which goods are unloaded, warehoused, handled and re-forwarded without exposure to the weather or any other cause of deterioration. The operations required are carried out in the most economic, rapid and careful manner.

In July, 1920, a steamer bringing from America 12,000 bales of cotton was unloaded within three days after its arrival. As the last bale quits the hatchways the whole cargo is classified and marked and ready for re-shipment. It is worthy of mention that the unloading and storing charges for cotton are 600 per cent. higher at Rotterdam than at Ghent.

In 1910 the cotton imports by the Port of Ghent amounted only to 15,900 bales; in 1913 they had risen to 118,000 bales, and in 1926 to 206,559 bales; while in 1927 the figures had risen further to 300,749 bales.

Shipping Figures.

The following table shows the number of ships with their total tonnage and the average tonnage per vessel which have arrived in the port of Ghent from the year 1860 until 1928:—

Year.	Total No. of Vessels.	Tonnage.	Average Tonnage per Vessel.
1860	357	49,218	138
1870	382	72,809	190
1880	653	211,010	323
1890	952	427,351	449
1900	1,134	697,564	616
1901	1,133	716,723	633
1902	1,094	688,301	629
1903	1,123	780,777	696
1904	1,152	772,827	671
1905	1,047	733,584	701
1906	1,167	827,481	709
1907	1,217	849,555	698
1908	1,300	907,961	691
1909	1,282	939,517	732
1910	1,268	933,565	736
1911	1,340	1,022,331	762
1912	1,332	995,334	746
1913	1,398	1,061,425	759
1914	859	676,103	787
1919	330	216,335	655
1920	758	532,051	702
1921	1,381	1,025,198	743
1922	1,652	1,291,634	781
1923	2,215	1,761,676	795
1924	1,829	1,525,048	834
1925	1,755	1,543,232	875
1926	2,548	1,945,680	764
1927	2,428	2,053,538	846
1928	2,617	2,256,412	863

Importation of Canadian Cattle into the Cardiff Docks.

THE first consignment of Canadian cattle to be landed at the Cardiff Docks for some years arrived on Thursday, November 20th. The s.s. "Salacia," with 150 head of cattle from Calgary, Canada, berthed at the Great Western Railway Company's up-to-date cattle lairs at Roath Dock, Cardiff.

The importation of Canadian cattle into the United Kingdom ceased some few years ago as a consequence of the serious floods on the Mississippi, in the North American continent. The Canadian stockyards found a new market at their own doorstep, and as a result practically the whole of the Canadian cattle for disposal was sold to the Americans for re-stocking the pastures on the Mississippi.

However, now that this re-stocking has apparently been accomplished, we may look for a revival of these cargoes into this country.

Cardiff is one of the comparatively few ports in Great Britain at which live cattle may be imported, being licensed for this purpose by the Minister of Agriculture and Fisheries.

Every facility is provided for this important branch of the import trade, and advantages are offered at Cardiff which are comparable with any of the cattle-importing ports.

From the shipowners' point of view it is interesting to note that the lading of the cattle takes place from the ship at a convenient point in the Roach Dock, near the entrance lock, thus ensuring rapid despatch.

Cardiff being the centre of the coal producing district, as well as a large industrial area, cheap bunkers of an exceptionally

high quality are available, as is also the probability of an outward general cargo.

In addition, Cardiff is the nearest British port to Canada with the necessary facilities for dealing with livestock traffic designed for the English and Welsh markets.

From the cattle shippers' point of view, also, there are numerous advantages to be considered, foremost among which is that the cattle are landed at a special berth which directly communicates with the lairs. The lairs are capable of accommodating 350 store or 500 fat cattle, in addition to sheep and pigs, at the same time, and are so constructed that they can be extended to meet further requirements at any time. The most up-to-date facilities for the watering, feeding and inspection of the cattle by the Government inspectors have been provided.

Contiguous to the lairs are well equipped abattoirs, and there are large chill rooms connected with the abattoirs by means of overhead runways, which effect the transport of carcasses between these points with a minimum of handling. An extension of these runways to the direct loading platform gives a similar advantage when the carcasses are being loaded away.

For cattle which are to be sent away direct from the ship the company have provided sidings alongside the lairs, whereby the cattle can be loaded direct from the lairs into the hygienic vacuum-brake vans provided by the Great Western Railway Co. for this traffic.

In addition to the above, an auction ring is provided for the use of salesmen, auctioneers and buyers, thus making it possible for the cattle to be landed, sold and delivered to the purchaser within a few hours.



## North-East Coast Notes.

### Tyne Improvement Commission.

**A** PARTICULARLY interesting and important suggestion has been laid before the members of the Tyne Improvement Commission in a report by their Secretary, Mr. Albert Blacklock, in respect to the application of Newcastle-on-Tyne Corporation and Durham County Council for permission to strengthen and widen Scotswood Suspension Bridge over the Tyne. As a matter of fact a start has already been made with this work, but as these repairs are admittedly of a temporary character, the Commissioners' suggestion for the construction of an opening bridge contains great potentialities for the future.

About half a century ago it was impossible for sea-going vessels to go beyond the old Tyne Bridge at Newcastle. Then that bridge, which owed its original foundations to the Romans, was removed by the substitution of the present Swing Bridge, which made it possible for vessels to go further up the river, which was rendered navigable by important dredging work by the Tyne Improvement Commissioners. To-day progress westward is rendered impossible by bridge crossings at Scotswood and Wylam.

The Commissioners' report referred to states that in 1927 alterations were contemplated to the Suspension road bridge in view of the traffic demands. At conferences which the Commissioners had with local authorities the latter intimated that there was no present intention on account of prevailing economic conditions of rebuilding the bridge, the proposal being to expend £30,000 to £40,000, it being understood that the expenditure would "tide over" the next few years. The Commissioners stated to the local authorities that they had no objection, subject to the river not being interfered with, and on the understanding that the expenditure would not delay indefinitely consideration of a river crossing at Scotswood which would accommodate both road and rail traffic and at the same time admit of the upper reaches of the river being opened out for the passage of sea-going vessels, and so assist developments of the land on the river banks above Scotswood bridges for industrial purposes.

### Development Policy.

Charged by Parliament with the conservancy of the port, it was the duty of the Commissioners, the report stated, to maintain and develop it. It was from that standpoint that they had submitted to the City Corporation, the Durham County Council, and the London and North-Eastern Railway Co., a proposal to enable the policy of development to be continued:—That the Suspension Bridge and the railway bridge immediately westward, be substituted by an opening bridge built at or about the site and level of the existing bridges, and capable of carrying both road and rail traffic. The existing fixed bridge constituted a barrier to the development of the river to the westward, inasmuch as there was a headway of only about 18-ft. at H.W.O.S.T. at the Suspension Bridge and of about 21½-ft. at the railway bridge. Westward there was an area of land capable of development for industrial purposes.

It was understood that the Railway Company was not opposed in principle to an opening bridge provided that the working of the Company's rail traffic was not interfered with and that no additional cost be borne by the Company. The views of the Commissioners had been placed before the Minister of Transport and Lord Ponsonby had intimated that the Ministry was strongly in favour of the scheme, although the department could not contribute to any part of the bridge necessary for railway purposes. Thus the matter rests at the moment, but it may be regarded as practically certain that the scheme will come to the front in the course of time.

### Newcastle Quay.

It was reported at the meeting of the Tyne Improvement Commission that the Dredging and River Works Committee had had before them plans which the City Corporation had prepared for the eastern extension of Newcastle Quay. The extension is 637-ft. long and is to be constructed of reinforced concrete and there will be a preliminary dredged depth at low tide of 20-ft. and an ultimate depth of 30-ft. at L.W.O.S.T. The plans were approved by the Commission. It may be noted that the Corporation Quay during the year ended March 31st last cost the City ratepayers £10,938. Revenue for the last year totalled £42,250, while working expenses amounted to only £23,588. The loss is consequent upon the charge of £29,649 to cover interest and redemption of loans to meet capital expenditure.

### Trade Statistics.

Not one of the trade reports from the chief centres in this area is as favourable as could be desired. Tyne coal and coke

shipments in the ten months of this year amounted to 14,424,978 tons, compared with 16,403,834 tons in the corresponding period of last year—a decrease of 1,978,856 tons. In the ten months of 1913 the shipments were 16,922,781 tons. This year 201 vessels have shipped 59,594 tons of oil fuel bunkers in the river, an increase of 41 vessels, and 11,322 tons over last year. Mr. R. S. Dalglish, remarking on the decrease of coal shipments, said it was interesting that the Commissioners' staiths were up 1.14 per cent. on the month. Merchandise had increased by 13,272 tons in October over the figures for October of last year.

Some slight diminution in the amount of idle tonnage was reported. At the end of October there were in the Tyne 89 vessels of 164,043 tons net register idle, compared with 90 vessels and 153,695 tons at the end of September. A year ago there were only 23 vessels laid up in the river.

The figures for coal and coke shipments submitted to the Blyth Harbour Commission were as follow:—September 1930, 376,826 tons; 1929, 465,321 tons; and 1913, 400,416 tons. The total figures for the nine months ended September 30th were 3,572,680 tons, a decrease of 14 per cent. compared with 1929, but an increase of 1 per cent. over 1913 figures.

### Wear and Tees.

The official return of coal and coke shipments from Sunderland during the nine months to September 30th were:—Coal, 3,470,050 tons, compared with 3,764,556 tons for the same period of 1929, a decrease of 8 per cent. Coke shipments were 69,730 tons, compared with 58,025 tons, an increase of 20 per cent.; jointly there was a net decrease of 7 per cent. The imports for the same period at 282,093 tons were practically unchanged. The exports, excluding coal and coke, totalled 66,670 tons, compared with 40,711 tons.

The shipments of coal and coke from the Hartlepools in September amounted to 258,748 tons against 282,179 tons. For the first nine months of the year the shipments totalled 2,461,703 tons compared with 2,579,589 tons a year ago.

The return of iron and steel shipped from the Tees during October contained one very encouraging feature. The total shipment of pig iron being the highest for any month this year. In all, 22,944 tons of pig iron were shipped, of which 10,973 tons were sent abroad, and 11,971 tons coastwise. The shipments of pig iron in September were only 14,130 tons.

### Grants and Income Tax.

An important judgment was given in the Court of Appeal at the end of October regarding the liability for assessment for income tax of grants from the Unemployment Grants Committee, when the Seaham Harbour Dock Co. won their appeal. Mr. Justice Rowlatt, in the King's Bench Division, had upheld the decision of the Income Tax Commissioners that a grant of £7,500 by the Government to the Seaham Harbour Dock Co. for extension works was income properly assessable to tax. The Master of the Rolls said, however, that Mr. Justice Rowlatt was wrong; it was more of the character of a capital sum and should not be assessed to income tax. Lords Justices Slesser and Romer concurred, observing that the £7,500 was 5 per cent. of the estimated cost, and the work actually cost £156,000. This was a capital receipt and not income.

### Personalia.

Mr. Alexander J. Mundell, who has just retired after about 50 years' service with the Tyne-Tees Steam Shipping Co., was well known on Newcastle Commercial Exchange, where he had acted as the Company's representative. Formerly he was with the General Steam Navigation Company.

Captain John Bruce, the Commodore of the Tyne-Tees Steam Shipping Company's fleet, has retired after 59 years' service at sea, and a presentation was made to him of a silver salver, at the offices of the Company in Newcastle. Captain Bruce has a remarkable record. During his command he safely carried in the London-Newcastle trade about 300,000 passengers, and 2,000,000 tons of cargo, and in the Tyne-Continental trade about 15,000 passengers and 1,000,000 tons of cargo. Capt. Bruce never had an accident, nor lost a passenger.

A very well-known personality passed away by the death of Alderman Sir John FitzGerald, of Newcastle, a member of the Tyne Improvement Commission.

The Marquess of Londonderry has accepted the invitation of the North of England Steamship Owners' Association to become president in succession to the late Duke of Northumberland.

## Madras Harbour Notes.

### Madras Port Trust's Plans Disputed.

THE CORPORATION OF MADRAS have asked the Government not only to take away the land already granted for the development of the Madras Port Trust but also to refuse to sanction the application of the port for further extension up to Kelly's drain on the foreshore opposite the High Court. The Port Trust wants the land for the construction of quarters for their officers and some of the quarters are almost completed. The land now required includes the playing ground of the Christian College the authorities of which appear to have no objection to hand over the ground to the south of Kelly's drain.

The Director of Town Planning objects to the extension of the Trust in the direction indicated on aesthetic grounds and is understood to have suggested that the extension should take place on the northern side of the harbour. The suggestion is considered by some as impracticable. The superintending engineer is reported to have expressed the wish that there should be a well-laid plan for the development of the foreshore and the expansion by the Port Trust should come into the plan. Public buildings and hotels could be built on the foreshore. The director of town planning thinks that parks should be laid out on the foreshore referred to while a certain member of the Government holds the view that the present Marina should be remodelled opposite the fort. Another Government member does not attach any importance to the agitation against the extension of the Trust buildings, while aesthetic considerations of the city should not stand in the way of improving Madras's trade conditions. The whole question will be discussed by Government as early as possible.

### Cochin Harbour.

A meeting of the Cochin Port Conservancy Board was held at the Port Office, recently, with S. C. Rae, vice-chairman of the Board, in the chair. Mr. R. C. Bristow, Harbour Engineer-in-Chief to the Government of Madras, who has returned from leave and resumed charge of his duties was present. The Travancore and Cochin Durbars were also represented.

The Board considered a petition from the Lascars of the Port Boat Establishment for the restoration of a local allowance of Re. 1 per mensem which they were enjoying from 1926, but was lately discontinued. It is a special allowance granted to all Government servants in expensive localities. The Board recommended the allowance being continued.

The question of constructing a pilot launch similar to that used in Karachi was next considered, and it was resolved to instruct the Director-General, India Store Department, London, to call for designs and estimates.

Statistics placed before the meeting showed that 400 ocean-going steamers entered the harbour between August, 1929, and May, 1930, while only 70 steamers stayed outside. The steamers that stayed outside did so only to save pilotage fees, having only small quantities of cargo to load or discharge. According to the harbour authorities, December, 1929, should be taken as the date when the regular practice was established for steamers to load and discharge at moorings in the inner harbour.

### Protest to Port Trust at Tuticorin.

The local Port Trust authorities have for the last two weeks been collecting landing dues on passengers' luggage arriving here from Ceylon, the collection being made on such articles on which Customs duty is assessed. This procedure, which is reported to have been adopted without due notice necessitates the examination of luggage both by the Customs authorities and the Port Board, and is, it is understood, causing considerable inconvenience to the passengers. The collection of dues on diamonds, tins of biscuits or cigarettes, is considered to be iniquitous by the passengers. It is understood that a protest signed by the local merchants on behalf of the passengers has been submitted to the Port Trust chairman urging the abolition of the landing dues.

### Foreign Trade of Madras.

Import figures for Madras for August, 1930, compare with the corresponding month of 1929 much as did those for July last. There was a total shrinkage of Rs. 55 lakhs, against Rs. 54 lakhs in July. The only heading which showed an increase was "oils" which on balance was just over Rs. 12 lakhs larger than in August, 1929. The principal shrinkages were: Sugar, Rs. 14 lakhs; sundries, Rs. 10½ lakhs; piecegoods, Rs. 10 lakhs; machinery and millwork, Rs. 7½ lakhs; yarns, Rs. 6½ lakhs; iron and steel, Rs. 6 lakhs and manures, Rs. 5 lakhs. Exports were in a worse plight still as they totalled Rs. 146 lakhs less than in August, 1929. Groundnuts as before took pride of place with a drop of Rs. 60 lakhs, while raw cotton a good second, with Rs. 55½ lakhs less. Piecegoods were next with Rs. 8½ lakhs less. Tea was Rs. 5½ lakhs less,

whilst skins on balance were Rs. 4½ lakhs less. The only heading to show an increase on the August 1929 figures was unmanufactured tobacco which was up Rs. 4½ lakhs.

### A New Dredger for Tuticorin.

A special meeting to consider matters in connection with the purchase of a new dredger was held early this month under the chairmanship of Mr. S. P. Thompson. The following members were also present: Messrs. S. H. Marakayar, J. U. MacIntosh Osborne, K. Nadar, J. L. P. Roche Victoria and Natraj Nadar.

After discussion the following resolution was adopted: The Tuticorin Harbour Board agree with the Deputy Harbour Engineer-in-Chief that in view of the small difference in cost between a 400-ton and 500-ton dredger, the latter should be purchased.

The Board do not think that they have sufficient information before them to decide which tender should be accepted. They would like further investigation to be made into the capabilities of the De Klop firm and its financial stability. They are also of the opinion that Messrs. Fleming and Ferguson and Messrs. Simons should be asked if they can reduce their tenders.

The Board would prefer that the decision as to which tender should be accepted should be taken to technical experts, on the basis of the best value for money. The Board suggest that the services and advice of Mr. Milne, now on leave in England might be of use to the naval architects in coming to a decision.

### Alleppey Port Matters.

The urgent need for additional godown accommodation at the Alleppey Port has been strongly represented to the authorities and the matter is receiving the consideration of the Government. The registration of tally clerks under the Chamber has also been introduced at Alleppey Port, in accordance with the practice prevailing at certain other coastal ports. The purpose of the scheme is to ensure more adequate supervision on the part of the clerks tallying on board the steamers, both in the interests of the shippers and the steamer companies, and it is to be hoped that results will justify its introduction.

A telephone service has also been installed in Alleppey, and the trunk lines which have already been installed between Alleppey, Cochin and Calicut are working successfully, to the great benefit and convenience of the port.

### Alleppey's Foreign Trade.

The foreign trade of Alleppey, both exports and imports, has been on the decline in the recent past. The decreases during the year as compared with 1928-29 is mostly attributed to the general trade depression prevailing, not only in Alleppey, but throughout India. The figures show to what extent the trade of this port has been affected. The total exports for 1929-30 were Rs. 37,254,952, as compared with Rs. 39,688,312 for 1928-29; and the total imports were Rs. 11,138,883 for 1929-30, as compared with Rs. 11,602,084 for 1928-29.

### Completion of New Pier and Dock at Nordenham.

The "Midgard" Deutsche Seeverkehrs A.G. in Nordenham have now completed the construction of an inner harbour and pier equipment at Nordenham. The harbour is 500 metres long and 30 metres wide. A 6 to 7-ton crane has been installed in order to facilitate the work of loading and unloading of deep sea steamers.

### Amended Plan for Bidston Dock.

The Mersey Docks and Harbour Board has amended the plan for new dock construction arising from the development of their Bidston Moss estate, the change agreed to involving an estimated reduction of about £10,000 in the cost of the entire scheme. A slight variation in the width of the new dock in course of construction on the Bidston Moss estate to the south of Wallasey Pool in connection with the West Float extension scheme has been authorised. While the original width of 450-ft. is to remain at the easterly or Birkenhead end, the engineer recommends a tapering off to a width of 350-ft. at the ultimate western end when the new dock is completed to its full length in the future. At the present time the dock is being constructed at a length of over 1,600-ft. with the intention to continue its length considerably in due time, although the precise limit of the extension is not yet settled. The portion of the dock now in hand has already been sanctioned by the Government Unemployment Grants Committee at an estimated cost of £923,000, and the tapering reduction in width now devised as affording a more extensive land area on the northern or Wallasey side for quay and shed accommodation and facilities is estimated to reduce the calculated cost to £913,188.



# Mersey Docks and Harbour Board.

## Annual Report for the Year ended 1st July, 1930.

**A**T a meeting of the Mersey Docks and Harbour Board, held on November 27th, 1930, Arthur W. Bibby, Esq., was in the chair and presented the annual report as follows:—

" Gentlemen:—

" The Accounts and the Dock Engineer's Report for the year ended the 1st July, 1930, are now before you. The accounts have been audited and are ready for circulation.

" You will see from the accounts that the expenditure under borrowing powers for the year was £361,421, being a decrease of £25,984 on the previous year. Nearly one-third of the amount was spent on the Princes Dock improvements and the remainder on important improvements both at Liverpool and Birkenhead.

"Turning to the revenue account, the rates received on vessels amounted to £1,397,568, being an increase of £17,918 over the previous year, but owing to the decrease in the rates and dues on goods of £96,965 the total income from rates and dues on ships and goods shows a net decrease of £79,047. You will remember that a reduction of 5 per cent. was made in the foreign dock tonnage rates as from the 1st of January last, and that there was a reduction in the rates of vessels discharging bulk oil at Birkenhead and the South Dingle Jetty on the 1st of March, otherwise the increase in the dock tonnage rates received on vessels would have been much greater. It is very interesting to note that the number of vessels paying dock tonnage rates and harbour rates during the past year was 20,771, and this figure has been more or less the same since the Board was constituted in 1858. The figure in that year was 21,352, and the tonnage of the vessels 4,441,943. The tonnage for last year, however, was 21,314,820, nearly five times as much, and a record at this port. It is hardly necessary to remind you that the decrease in the rates and dues received on goods is chiefly due to the fact that large reductions have been made in the rates and dues on a large number of articles, consequent upon the de-rating relief received under the Local Government Act, 1929. There is, however, a surplus on the year's working of £267,338, and of this amount £100,000 has been set aside to the sinking fund, £11,880 to the fire and marine insurance account to replace the amount withdrawn, £81,421 to renewals and depreciation, and the balance (£74,037) has been carried to the unappropriated receipts account.

" The Board's warehouses have been fairly well occupied during the year, the imports of grain and sugar having shown increases of 147,500 tons and 35,750 tons respectively.

" I think you will agree that the account shows a very satisfactory result when the general trade depression which has been experienced by everybody is borne in mind.

" During the year Bonds to the value of £3,515,753, bearing interest at an average rate of £5 5s. 1½d. per cent. were either paid off or renewed. Of these, £2,179,228 were renewed at an average rate of £4 19s. 1½d. per cent., while £1,336,525 were paid off. New money to the amount of £1,100,350 was borrowed at an average rate of £4 17s. 11d. per cent., as compared with a rate of £4 18s. 9½d. last year.

" I now draw your attention to the dock engineer's report, which contains reference to several works of paramount importance which have been put in hand during the year.

" The construction on the Bidston Moss Estate of a new wet dock entered from the West Float, Birkenhead, with surrounding quays ready for sheds, rails and roadways, at an estimated cost of £913,000, was commenced on the 15th of May, 1930. The dock when completed will serve the fine area of adjacent land, and valuable sites will be available for manufacturing firms requiring water frontage.

" The modernisation of the Central Docks at Liverpool, which involves the demolition of the Clarence Half-Tide Dock and contiguous docks, and the construction of a new Clarence Dock with all the necessary facilities, at an estimated cost of £973,000, was commenced on the 22nd of May.

" Tenders have been accepted for the construction and erection of five rolling lift bridges, four at Birkenhead and one at Liverpool. These bridges are in substitution for existing bridges which are unable to carry the weights which they are called upon to do under modern transport conditions, and the estimated cost of the work is £295,000.

" In connection with each of these schemes arrangements have been entered into with the Unemployment Grants Committee under which the Board will receive financial assistance over a term of years from the Government.

" The improvements at the Princes Dock, including the work of increasing the width and lowering the sill of the north entrance to the dock and the modernisation of the sheds have been completed, and the water was run into the dock on the 2nd of November, 1929.

" The engineer is carrying out, on behalf of and at the cost of the Corporation of Liverpool, certain work in connection with the new electric super-power station at the Clarence Dock, including the construction of suction and discharge culverts, water screening chamber and other works, outside the station premises. The works are well advanced.

" The berth at the east end of the south side of the Carriers Dock has been specially equipped by the provision of railway facilities, cranes, etc., for the handling of rough cargoes direct to or from railway wagons.

" At Birkenhead it has been decided to provide four 5-ton portal electric cranes on the quay to serve the new shed on the north side of the West Float, which was completed in February last.

" The construction of the new coal conveying plant at the south side of the West Float, to take the place of two of the hydraulic hoists, is approaching completion, and it is expected that the contractors will be ready to commence the erection of the conveyor on the site at an early date.

" Provision is being made for additional rail siding accommodation at the south side of the West Float by arrangement with the London and North-Eastern Railway Company; under this arrangement additional standage accommodation will be provided for 269 wagons.

" I do not propose to trouble you with further particulars of works carried out, as a perusal of the Engineer's Report will show what alterations and improvements have been made. It has always been our policy to look ahead and to keep pace with modern requirements in the handling of ships and goods, and notwithstanding the difficult times through which the community at large have been passing, we felt quite justified in putting in hand the works I have already mentioned.

" The construction of the Training Bank on the east side of the Crosby Channel, which was commenced in July, 1929, is well advanced. The Training Banks on the east and west sides of the Crosby Channel appear to be having the desired effect, and it may be decided eventually to raise the height of these Training Banks. The depths of the channels have been well maintained.

" May I take this opportunity of acknowledging the valuable services which have been given by our general manager and the whole of the staff? Their loyal work is thoroughly well known to you, and they have our best thanks."

### Kiel Canal Traffic in October, 1930.

A report received by the Department of Overseas Trade from the Acting British Consul-General at Hamburg states that there was a decline of 3.65 per cent. in the number of vessels passing through the Kiel Canal during October as compared with September, but the tonnage showed an increase of 3.62 per cent. Compared with the corresponding month of 1929 there was, however, a considerable decline both in the number of vessels and the tonnage, the figures being as follows:—

	No. of Vessels.	Net. Reg. Tons.
October, 1930 ...	4,749	2,020,684
October, 1929 ...	5,105	2,341,389
September, 1930 ...	4,929	1,950,046

Steam and motor vessels represented 91.19 per cent. of the total tonnage and 78.13 per cent. of the vessels using the canal carried cargo. In the direction Brunsbüttelkoog-Holtenau (i.e., to the Baltic Sea), 2,289 vessels aggregating 938,234 net reg. tons were cleared, while 2,460 vessels aggregating 1,082,450 net reg. tons passed through in the opposite direction towards the North Sea.

Of the total of 4,749 vessels using the canal in October, 2,333 vessels with a total of 1,838,817 net reg. tons were registered sea-going ships comprising the following:—2,238 freight and passenger vessels of 1,834,899 net reg. tons; 89 steam tugs of 3,341 net reg. tons; 6 fishing vessels of 577 net reg. tons.

Further, 2,257 sailing vessels of 133,385 net reg. tons, 144 lighters and barges of 44,330 net reg. tons, and 19 pleasure and Government vessels of 4,152 net reg. tons.

The vessels were loaded as follows (the figures in parenthesis are those for September):—4 (28) with passengers; 23 (20) with cattle; 228 (261) with coal; 65 (80) with stone; 51 (85) with iron; 482 (403) with timber; 763 (946) with grain; 41 (40) with ore; 731 (630) with other bulk goods; 1,004 (930) with general cargo; 105 (101) with miscellaneous cargo; 1,252 (1,402) empty or in ballast.

Personal enquiries regarding shipping and transport matters should be made at the City Office of the Department (Shipping and Transport Section), 73, Basinghall Street, London, E.C.2.



## Port of Southampton Topics.

### Work on Southampton Docks Extension.

**A** FURTHER stage in the work on the Southampton Docks Extension has been marked by the formation of a "lake" on the Western Shore, formed by the dropping of sluice gates at the western end of the area to be reclaimed.

As a result of the operation the 187 acres of mudland which are to be reclaimed under the first section of the scheme have been shut off from the River Test by reclamation banks, and the area is, therefore, no longer tidal. When the sluices were dropped the area was covered by water and this will remain until it is expelled by the pumping ashore of spoil, by which means the area enclosed will eventually become dry ground. The reclamation work will be begun in the early part of December.

Some idea of the task which lies before the James Dredging, Towing and Transport Company, the contractors, can be gathered from the fact that something like 3,500,000 tons of dredged material will be required to be pumped ashore before the area is won back by the river.

To undertake this formidable task the largest reclamation dredger ever built will be pressed into service. This plant is capable of depositing about 50,000 tons of filling-up material each week.

The greatest portion of the area to be won from the river under the first section of the scheme will become the property of Southampton Corporation. The area to be handed over to the municipal authorities amounts to 102 acres.

As the spoil procured by dredging the new approach channel to a depth of 35-ft. l.w.o.s.t. is secured and deposited in the "lake," the water, which has been enclosed by the reclamation bank will be expelled through openings which have been provided in the steel sluice gates.

The beginning of the reclamation will mark the start upon the last stage of the first section of the scheme, but it will be two years before the whole of the 3,800-ft. of quay and the 187 acres of land to be reclaimed are available.

### Statistics for October.

The Southampton Docks statistics for October present a series of "ups" and "downs." The number of vessels using the port rose from 292 to 312 inward and from 284 to 310 outward. Although this was an increase of 20 vessels inward and 26 outward, the aggregate gain in gross tonnage was under 3,000 tons. It is true that the outward gross tonnage rose from 1,503,918 in October, 1929, to 1,549,812, an increase of 45,894 tons, but unfortunately this was practically counter-balanced by the decrease of 43,197 tons inward, the respective totals for October 1929 and 1930 being 1,605,679 tons, and 1,562,482 tons. The net tonnage figures tell a very similar story, for against an increase of 27,816 tons outward is a decrease of 18,137 tons inward. The actual figures in this case are: outward 824,131 tons, as compared with 796,315 tons in October last year, and inward 829,771 tons, as against 817,908 tons.

Thanks to the very heavy shipments of South African fruit, the inward cargo shows an increase of 5,141 tons, the total rising from 52,926 tons to 58,067 tons, but there again the story is changed by an outward deficiency of 10,361 tons. The outward figures were 45,444 tons, as compared with 55,805 tons a year ago. The passenger figures also fell short of the totals for October, 1929, but this is not surprising in view of the fewer number of people travelling on the North Atlantic routes at this time of the year. The total inward was 12,510 as against 12,834, and outward 17,639 as compared with 18,591, the respective decreases being 324 and 952. Even this adverse report can be turned to an aggregate increase if the number of troops passing through the port is considered, for inward there were 2,885 in October as compared with 1,549 in the corresponding period last year, the increase of 1,336 in this case outweighing the total decrease of civilian passengers both inward and outward.

### Winter Overhaul of Big Liners Commenced.

The winter overhaul of the big liners has begun at Southampton and will continue up to March. As the Cunard Line have decided to defer the work of extending the "Berengaria's" oil fuel storage tanks the great liner will not require to spend so much time in dry dock as was originally planned. The 60,000 tons floating dock had been provisionally booked for a period of 77 days from November 6th, but now it is intended to lift the vessel for about 14 days towards the end of January. The "Berengaria" is the first of the vessels known as the "Big Six" to lay up for her annual overhaul.

### Sailing Schedules of Canadian Pacific Liners.

The new Canadian Pacific liner "Empress of Britain," which is now being completed at the Clydebank yard of Messrs. John Brown and Co., Ltd., will make her first sailing from Southampton on June 17th next year, when she will leave for Quebec. Of 42,500 tons, the liner will be the largest vessel ever built to trade between any of the ports within the British Empire. She will have a designed speed of 24 knots. After running her trials in May, the "Empress of Britain" will make eight voyages to Canada and back between June 17th and November 21st.

The advent of the "Empress of Britain" will not only quicken travel to Canada, but also to some parts of the United States. The new "Empress" will not rival the North German Lloyd liners, "Bremen" and "Europa," in speed, but passengers by the "Empress of Britain" will probably be able to reach certain parts of the United States before travellers in a North German Lloyd liner leaving Southampton on the same day, because of the shorter ocean passage undertaken by the Canadian ships.

The Canadian Pacific sailing schedule shows that there will be 52 sailings from Southampton between January 20th and November 21st next year, and as there will be as many arrivals, over a hundred vessels will be dealt with here. Things will be very slack at the beginning of the year, for there will be only one departure in January, two in March, and three in April. After that, however, there will be a succession of busy months until November.

### The British-India Line and Southampton.

One result of the recently-established connection of the British-India Line with Southampton is that two new vessels, which are to embody interesting features, will be seen here. They are not intended for the service that has been opened from Southampton to Bombay, for they are being built for the British-India's passenger trade between Bombay and Durban, but each of the vessels will make a special voyage from Southampton before taking up her place on that route.

The vessels are under construction at Glasgow. They are to be known as the "Kenya" and "Karanja." The former is in an advanced state and if all goes well she will leave for London at the end of the year. She will load cargo in the Thames and proceed to Antwerp. She will embark her British passengers at Southampton on January 20th and sail for Bombay.

The "Karanja" is expected to be ready about the end of March, and will follow a schedule similar to that of the "Kenya," making Southampton her port of call for passengers.

The two vessels have been constructed to give particularly good accommodation for passengers. They are of about 9,000 tons and will carry first and second class. The accommodation is greater than on many of the British-India vessels, and no pains are being spared to assure a high degree of comfort for passengers.

It is gratifying to note that the number of ships being sent to Southampton by the British-India Company is increasing. The "Dumana" and the "Domala" have already made their first voyages from this port for Bombay and Karachi. These "D" vessels are listed to make regular sailings from Southampton and it is hoped that other vessels will find their way to this port in the New Year.

### Arrival of the "Dinteldyk" from the North Pacific.

The development of the traffic between the North Pacific and Southampton was emphasised during November by the arrival of the "Dinteldyk" with one of the largest cargoes brought to the port from the North Pacific. The "Dinteldyk," which is engaged on the joint service operated by the R.M.S.P. and the Holland-America Line, brought a very diversified load ranging from timber to canned and fresh fruit. At present 16 ships are regularly engaged between the North Pacific ports and Europe, and the majority call at Southampton. It is one of the smaller sides of the port's activities, but none the less important.

### Sea or Air for Atlantic Crossings?

The recent appearance of the giant German flying boat "Dornier Do X" in Southampton Water raised again a matter of considerable importance to Southampton, the question of sea or air for Atlantic crossings. Southampton is the premier passenger port in the United Kingdom, largely on account of its geographical position, but if air travel should displace travel by sea to any great extent there would undoubtedly be great changes, and its position might be challenged by places perhaps more suited to the reception and dispatch of air liners.

*Port of Southampton Topics—continued.*

It is certain that for many years air travel will not seriously challenge the sea. The fact that liners can put to sea under almost any weather conditions and can go ahead in the face of the elements must be a big factor in guaranteeing their pre-eminence. While in these days speed is important, safety and reliability are not merely important, but are absolutely necessary.

*Sale of Valuable Property facing the New Docks.*

Messrs. John D. Wood and Co., the Estate Agents, of 23, Berkeley Square, London, W.1, announce the sale by auction in January next of the highly important property known as the Victoria Brewery, Southampton.

This Hotel occupies a well-known site close to Southampton West Railway and faces the new Docks for passenger steamers which are now in course of erection.

The property is freehold and has an area of about 2 acres 2 roods 36 poles, with the exceedingly valuable frontage to Commercial Road of over 400-ft.

The substantial buildings of the Brewery, which was built about 60 years ago, will be sold with the site, but there is a restriction against the property being utilised for a brewery or the sale of alcoholic liquors, except to Hotel residents.

The site is eminently suitable for the erection of a large Hotel which will be urgently required very shortly in this position, or for a Bank, Insurance Company's offices, etc.

Possession will be given upon completion of the purchase.

*Belfast Port Affairs.**Meeting of Belfast Harbour Commissioners.*

**T**HE tonnage arriving at the port of Belfast, from the beginning of the year until the end of October passed the three million mark. This gratifying fact was disclosed at the meeting of the Belfast Harbour Commissioners held on the 4th November.

The figures were given in the report of the Harbour Master (Captain McIntyre). This showed that 292 vessels arrived at the port during the period between October 19th and November 1st. Of these 262 were coastwise and cross-channel, 25 were foreign, and 5 non-trading.

The total tonnage of the vessels which arrived from January 1st to November 1st was as follows:—Coastwise and cross-channel, 2,365,534, an increase of 219,011 as compared with the corresponding period last year; Foreign, 617,961, an increase of 70,359; Non-trading, 110,670, an increase of 36,608. Grand total, 3,094,165, an increase of 325,978.

*Big Timber Shipments.*

With the unloading of a cargo of timber from Vancouver, ex the s.s. "Pacific Commerce," and a consignment by the s.s. "Varna" from Sweden, the timber shipping season to Belfast came to a close. The season's shipments were exceptionally heavy, as the total landed for the nine months ending September was 46,954 loads, against 37,616 loads for the whole of 1929.

Owing to the building boom all over Ulster, the demand for sawn timber was much above the average, and while timber merchants had no reason to complain of the volume of business transacted, the recent heavy shipments will enable them to carry forward considerable stocks. In this respect the merchants showed characteristic Ulster foresight. The conditions earlier in the year in the Continental exporting countries foreshadowed a shortage of timber and a consequent rise in prices. The action of Russia in rushing the cutting and export of timber, however, changed the whole situation, with the result that the cost of prime timber, according to a Belfast merchant, fell to between 15 and 20 per cent. below that at which merchants entered into contracts several months ago. The Belfast merchants, therefore, bought heavily and are now carrying over from 33 to 50 per cent. greater stocks than the average of previous years.

*Nine Months Trade.*

The official report issued by the Belfast Harbour Commissioners of the goods dealt with at the port during the nine months ending September contains some very illuminating figures.

Regarding the linen trade, one of Ulster's two staple industries, the report shows that during the period 26,564 tons of linen were exported, compared with 29,669 tons during the corresponding period of 1929, a fall of 3,105 tons. Imports fell from 1,605 tons to 1,460 tons. Of linen yarns 3,028 tons were exported and 2,172 tons imported, as compared with 3,405 and 4,028 tons respectively. The flax seed exported rose from 104 tons to 158 tons, and the imports fell slightly from 1,631 to 1,614 tons. Flax imports rose over 3,000 tons from 12,302 to 15,643 tons.

The figures relating to the second staple industry, ship-building, were better than was expected. The imports of iron and steel castings rose from 11,286 to 12,917 tons and of sheet and plate from 41,031 to 43,647 tons. Of wrought and bar, however, the imports fell from 44,967 to 43,333 tons.

The statistics relating to agriculture were good and bad. The exports of cattle rose from 61,979 head during the nine months of 1929 to the satisfactory total of 76,111 during the first nine months of this year. The number of horses exported

was 1,806 against 1,556 a year ago. Of pigs 10,887 were exported as against 8,901 last year. Exports of pork dropped from 2,193 to 1,578 tons, and of bacon from 5,157 to 4,481 tons. On the other hand imports of bacon rose from 1,802 to 2,250 tons. Butter exports fell from 974 to 929 tons and imports from 2,245 to 2,103 tons. The export of eggs continues to go up, the figures for the period of this year being 15,877 tons compared with 15,522 last year. Fowl to the weight of 3,714 tons were sent out of the country, an increase of 168 tons.

Potato exports showed an unusually heavy drop, from 80,872 to 25,605 tons. The export of hay, however, rose from 628 to 4,894 tons. The imports of wheat showed an increase from 58,802 tons to 64,629, while those of flour dropped from 54,821 to 52,913 tons. A slightly increased quantity of Indian corn was imported, the total being 205,269 tons.

The oats dumping did not become so acute during the period dealt with as it has since, but the amount of oats brought into the port during the nine months was 12,238 tons, a very much larger amount than ever before in the long history of the port. The imports of condensed milk came to 1,069 tons, while 2,665 tons of margarine came in, about the average for the last few years. As has been the case for several years past, there was a steady increase in the quantity of luxury food imported. No less than 3,612 tons of preserves came in, 2,250 tons of preserved fruit, 7,056 tons of green fruit (exclusive of apples, oranges and grapes), and 1,454 tons of dried fruit. Apples imported totalled 4,296 tons, grapes 184 tons, and 8,229 tons of oranges. Of sugar the big amount of 24,975 tons was brought in, 5,616 tons of confectionery, and 3,784 tons of tea.

The growth of the motoring trade is reflected in the imports of motor cars, of which 4,791 were brought in during the nine months, compared with 4,647. The imports of commercial vehicles rose from 542 to 645, but those of motor cycles dropped from 449 to 415. No less than 44,502 tons of motor spirit were discharged, against 39,858 tons during the same period last year.

The exports of whisky fell from 2,777 tons to 2,059 tons, while 3,526 tons of ale and beer were landed, an increase of 157 tons. Of manufactured tobacco 2,738 tons were exported and 1,434 tons imported, compared with 2,158 and 1,222 tons last year. The imports of unmanufactured tobacco increased by 210 tons to 2,770.

*Congella Power Station, Durban.*

The Electricity Supply Commission of Johannesburg have just placed an order for the supply of new boiler plant in connection with the installation of further electrical generating equipment at their Congella Power Station, Durban. The erection of this station, in which the boiler plant is fired throughout with pulverised fuel, commenced in 1926 with the provision of four 60,000 to 80,000 lbs. B. and W. boilers fired by the Lopulco system, and has recently been extended by the addition of two similar boilers, also Lopulco fired. The contract for the steam raising plant now found necessary has again been placed with International Combustion, Ltd., but the equipment selected in this case comprises two standard combustion steam generators of 100,000 to 120,000 lbs. per hour evaporation at 270 lbs. per sq. in. pressure and 700 deg. F. final temperature, complete with Lopulco Pulverised Fuel Firing Equipment.

It is interesting to note that this is the fifth contract for pulverised fuel fired boiler plant secured by International Combustion, Ltd., in South Africa this year, and their fourth order for combustion steam generators, eight of which are now under construction, in addition to those already installed in British power stations.



## Ceylon Harbour Affairs.

### Ceylon's Foreign Trade.

**S**TILL FALLING is the depressing tale of Ceylon's foreign trade as told by the Customs Returns for September, just issued. Not only has both export and import values on goods fallen below those of last month, but they have also dropped below the figures for any month since September, 1922, for exports, and May, 1924, for imports.

The total exports dropped to Rs. 23,150,228 last month, which is less than half the figure for September, 1925, and is more than Rs. 12,000,000 less than September, 1929. During the last two months there has been a very marked drop in the exports of the Island. Prior to August the figures had remained around the Rs. 28,000,000 mark, and in March they even rose to nearly Rs. 33,000,000, but in August the total dropped to Rs. 24,000,000, and last month it fell by over another 1,000,000 rupees. The actual export figures are interesting:—January, Rs. 20,202,096; February, Rs. 29,245,441; March, Rs. 32,985,397; April, Rs. 29,376,263; May, Rs. 29,521,289; June, Rs. 28,111,138; July, Rs. 28,469,908; August, Rs. 24,711,482; September, Rs. 23,150,228.

Even more striking is the fall in the total value of exports during the first nine months of the year. The difference in the figures for this period compared with the corresponding total last year is Rs. 71,918,916. Almost as large a drop is shown in the import figures for the first nine months of this year compared with 1929—the difference being Rs. 68,869,252. Customs revenue has consequently suffered to a very considerable extent and there has already been a total drop of Rs. 2,297,052 in the revenue for the first nine months compared with the corresponding period last year. And this is in spite of the fact that the revenue consequent upon the increased duty on kerosene oil and motor spirits went up in this section by Rs. 2,533,256. The biggest drop in any import duty section, with the exception of the head "other goods" is shown in spirits and cordials where the revenue has decreased in the first three-quarters of the year by Rs. 1,507,936. In the export section there is recorded a drop of Rs. 403,087, of which rubber contributes a minus of Rs. 46,725. An even greater decrease is shown by tea—namely, Rs. 146,453. Desiccated cocoanuts' duties show an increase of Rs. 7,936.

### Total Customs Revenue.

The total Customs revenue collected last month was Rs. 3,920,965—import duties contributing Rs. 2,952,131 to this total and exports Rs. 965,538. The additional Rs. 3,296 is made up by sundries. The total revenue is approximately Rs. 7,000 less than during the previous month. The amount of tea exported to British possessions last month was 3,242,374 lbs.

valued at Rs. 2,423,665, and the United Kingdom took 9,298,935 lbs., at a value of Rs. 6,950,281. Foreign countries were Ceylon's customers to the extent of 15,447,415 lbs. valued at Rs. 11,546,916. All these sections showed considerable decreases when compared with the figures for August. The rubber exported to the United Kingdom amounted to 4,278,333 lbs. last month and in August the quantity was 5,396,931. British possessions took 170,601 lbs. last month and in the previous month the quantity was 227,406. On the other hand foreign countries increased their shipments over the August figures. Last month 18,733,188 lbs. were exported and in August the total was 16,739,478 lbs.

### Proposed Port Trust for Colombo.

The committee recently appointed by the Ceylon Government to report on the proposal to form a Port Trust in Colombo has already begun work. A special train has been commissioned to take them round the whole harbour and allied areas. The committee has already visited the breakwaters, the wharves and jetty. They were also taken by train as far as Mutwal, stopping on the way at the coal sheds and visiting the dock. They were then taken by train right up to the Kolonnawa Oil Installation and returned to the port.

### Colombo Port Commission Matters.

At a meeting of the Colombo Port Commission held on October 27th with Mr. B. G. de Glanville in the chair, a circular letter from the Colonial Secretary, was read, regarding the estimates of expenditure for the financial year 1930-31, and pointing out the necessity for retrenchment.

The chairman explained the present position of the Colombo Port Commission in this matter, and pointed out that the Port Budget of 1930-31 was already a conservative one, in the framing of which severe pruning had been employed. He was, however, going into each sub-head of the estimates anew, and he would make a report to Government with regard to the further economies which could be effected in the Budget, at the same time reporting what these economies would involve.

### Colombo Harbour Dredging.

During the month of September the dredger "Sir William Matthews" was engaged in deepening the coal berth area at berths 20 and 20½ S.W. dredging being carried out till rock was encountered on the north and shore sides of the cut. This area will be surveyed by probing and boring, and the rock-drilling plant will commence removal of this rock on completion of clearing the outcrops N.W. of mooring 32.

During the month a total quantity of 29,250 cubic yards of dredged material was removed and deposited at sea.

## Legal Notes: Docks Regulations Order.

**B**Y Section 79 of the Factory and Workshops Act, 1901, "where the Secretary of State is satisfied that any manufacture, machinery, plant, process or description of manual labour used in factories or workshops is dangerous to life or limb," he may certify such form of labour to be dangerous and he may make regulations designed to protect same. In 1904 a series of regulations were made in respect of the processes of loading, unloading, moving and handling goods in, on, or at any dock. Those regulations, as experience proved, were in some respects insufficient. For example, while in general it is the purpose of the Factory and Workshop Acts to protect the life and limbs both of the persons employed by the owners of a factory—and docks are expressly included in the definition of **factory** in the 1901 Act—and also of all persons working in the factory though not so employed, the Docks Regulations of 1904 were described as regulations for the protection of persons employed in the processes mentioned in the Section quoted. In particular, the regulation then made about hatchways proved incomplete, as in the case of King and Sons, Ltd. (1922), 128 L.T.R., 307, it was held that the words of that regulation read in conjunction with other parts of the regulations of 1904, had to do only with a case where there was more than one hatchway within the sphere of the activities of the person carrying out the work, or of his employees; or as Lord Chief Justice Hewart put it, "that each employer is responsible only for the protection of those hatchways upon which he has been employed to carry out work; in other words, those hatchways which have been or are being used, or are to be used by the particular persons employed by him or his agents upon the carrying out of the process."

Following on these and other judicial findings (Howlett v. Shaw Savill Co., 1924, 40 T.L.R., 778, for instance) new Regulations were made in 1925, and it was under these that

the recent case of the Manchester Ship Canal Co. (1930), L.T.R. 113, was brought.

By Regulation 34 of these it is prescribed—"where there is more than one hatchway, if any hatch of a hold exceeding 5-ft. in depth measured from the level of the deck on which the hatch is situated to the bottom of the hold, is not in use for the passage of goods, coal or other material, or for trimming, and the coamings are less than 2-ft. 6-in. in height, such hatch shall either be fenced to a height of 3-ft. or be securely covered. And under the head of "Duties" in the 1925 Regulations it is directed—"It shall be the duty of every person who by himself, his agents, or workmen carries on the processes, and of all agents, workmen and persons employed by him in the processes to comply with (*inter alia*) Regulation 34, provided that while the processes are being carried on it shall be the duty of the owner, master or officer in charge of a ship to comply with Regulation 34, so far as it concerns those hatches which are not in use and which during the processes have not been used, and are not about to be used for the purposes of the processes.

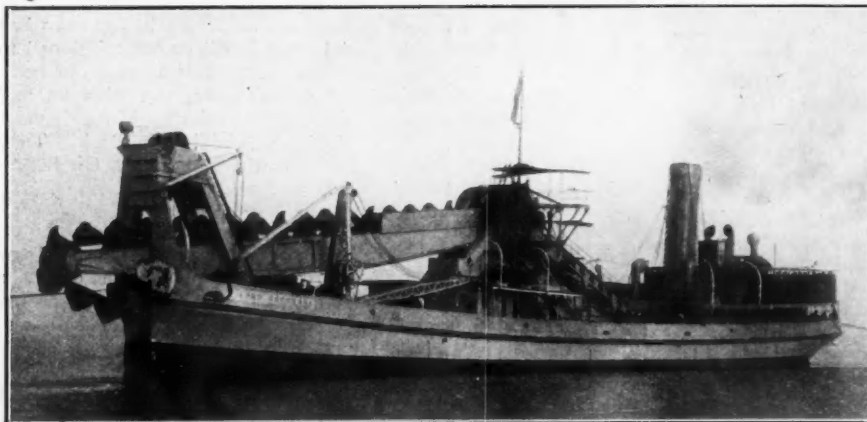
In the Manchester Ship Canal case above referred to two conclusions were reached in construction of these provisions: first, that the duty under Regulation 34 to fence or cover the hatches that have been used when unloading is upon those who carry out the process of unloading; the duty (while the process of unloading is being carried on) of the owner, master or officer in charge of the ship, in the case of a hatch not in use, is to comply with Regulation 34, so far as it concerns hatches which during the processes have not been used and are not about to be used for the purpose of the processes; and, second, that the process of unloading such a hold as is mentioned in Regulation 34 includes the fencing or the covering of the hatches that have been used and is not complete until such hatches have been fenced or covered.



## Large Modern Bucket Hopper Dredger Launched.

**M**ESSRS. FERGUSON BROTHERS (PORT GLASGOW), LTD., launched, on November 6th, complete with machinery aboard and steam up, the twin-screw bucket hopper dredger "Lord Cochrane." The naming ceremony was performed by Lady Carmichael, wife of Lieut.-Col. Sir James F. H. Carmichael, Kt., C.M.G., C.B.E., Crown Agent and Engineer-in-Chief, who was also present.

The dredger has been built to the designs and under the supervision of Messrs. Coode, Wilson, Mitchell and Vaughan-Lee, London, and to the order of the Crown Agents for the Colonies for special service at Bermuda, and will be employed principally in the dredging of rock. Mr. A. T. Coode, M.Inst.C.E., was also present at the launch.



*View of the Bucket Hopper Dredger "Lord Cochrane," taken on the occasion of her launch on the 6th November, 1930.*

The dimensions of the "Lord Cochrane" are 215-ft. by 41-ft. by 16-ft. 6-in. moulded, with an overall length over the dredging ladder of about 245-ft.

One of the principal features of the design is the builders' patent stream line well end, which has been found on service to enable vessels so fitted to attain their specified speed with a saving of 12 per cent. to 15 per cent. in horse-power.

The hull structure is built largely in excess of Lloyd's to suit the special requirements of the service. Woodwork generally throughout the decks, viz., beltings, awnings, etc., is of Moulmein teak.

The officers are accommodated in teak houses arranged on upper deck aft in large, well-furnished rooms to suit the climate. An up-to-date feature is the rubber lining which has been fitted in the main shoot to prevent wear and absorb shock.

The propelling and dredging machinery and all winches, which have been constructed by the builders, consists of two sets of triple expansion engines, which are arranged to disconnect

from propelling gear and connect to the dredging gear as required. The propellers are of the built type of bronze and have the builders' Newark patent oil glands between propellers and stern tubes.

All the gear and worm wheels in the vessel have machine-cut teeth and are of cast steel for the spur wheels and bronze for the worm wheels.

The upper and lower tumblers are of cast steel with renewable wearing pieces. The lower tumbler is fitted with the builders' patent sand excluders. The shafting throughout is of heavy construction and runs in massive gunmetal bearings.

The auxiliaries are of the latest modern type, including independent air pumps, circulating pumps, feed pumps, exhaust feed heater, auxiliary condenser, electric generator and duplex general service pumps.

Steam is supplied by two marine boilers at a working pressure of 180 lbs. per square inch. The boilers are arranged for oil firing on the Wallsend Howden forced draught system. Coal fronts are also provided to enable coal to be used as the fuel, if desired.

A vertical tubular boiler is fitted in stokehold for port use.

The forced draught fan and steering gear are placed at forward end of engine room on a platform at deck level.

The hoisting gear for the bucket ladder is placed on the starboard side below deck and is controlled from the control house on deck.

There are three mooring winches, two of them double-barrelled, one on port and one on starboard side near bow of vessel.

A triple-barrelled winch is fitted at stern to control the stern chains.

All the winches, which are of strong design, are fitted with cast steel wheels having machine-cut teeth. All pinions are fitted with coil clutches.

The bucket chain is specially designed for rock dredging. The buckets are entirely of cast steel with manganese renewable lips, also manganese pins and bushes. The links are of forged steel H section, also bushed with manganese steel.

The hopper doors, which are of extra heavy steel construction lined on top with greenheart, are controlled by two multi-barrelled winches, arranged on port and starboard sides, each fitted with double cylinder engines and bronze worm wheels on each shaft.

For handling buckets and lifting the large boulders encountered on service a special 8-ton steam driven crane has been fitted on the port deck with a large boulder dump adjacent to same.

A large searchlight has been fitted on fore framing for night work.

### Book Review.

**A Practical Treatise on Single and Multi-Stage Centrifugal Pumps.** By Raymond Defeld, Chief Engineer, A.C.E.C. Pump Department, Charleroi; Professor of Hydraulics at the University of Charleroi, Belgium. Pp. 216, index, 232 figures. Chapman and Hall, 21s. Translated by C. W. Oliver, B.A., B.Sc., E.S.E. (Paris).

Centrifugal pumps have so largely displaced reciprocating pumps for all types of work, particularly where large quantities of fluid have to be handled, that it is now the only kind with which engineers need seriously concern themselves. As with most types of simple mechanism, the centrifugal pump has been very extensively abused, and faults attributed to the pump itself can in the great majority of cases be laid at the door of those responsible for its installation. Professor Defeld's book should do much to simplify many of the problems of installation and operation which have so far proved somewhat elusive. His book deals very largely with design, and with this phase the harbour engineer is little concerned, though a study of the problems of design will help him in arriving at a better understanding of all types of centrifugal pumps and their wise application. For this reason, while the earlier chapters of the book are well worth study, the practical engineer will find chapters XI. onward the most profitable, and that chapter dealing with typical installations is very interesting and instructive.

The fact that the author is connected with the A.C.E.C. naturally accounts for the fact that the bulk of the text quotes data from pumps of that make, though other designers are mentioned, e.g., the Sulzer impeller. This characteristic

detracts very little from the value of the book, as the governing considerations in pump design are common to all types.

A feature of the work is the number and excellence of the illustrations, while the translation seems to be particularly well done. The general get-up and printing, now recognised as important points, even in text books, is well up to Chapman and Hall's high standard. It appears to us to be a book which no engineer concerned with the design, installation or operation of centrifugal pumps should be without.

### Canal Tolls Dilemma.

The Minister of Transport is considering an application by canal companies for authority to maintain tolls at the present levels. The Minister was given power to fix tolls when the canals were decontrolled after the war, as the companies found it impossible to exist upon the pre-war rates. The Canal Association has been informed, however, that this method of fixing charges may not be extended much further, and the companies are pointing out that, to protect themselves, they would be put to the expense of each promoting a private Bill in Parliament. Dock, harbour and some other authorities are in a similar predicament.

The Grand Union Canal Company, which is seeking statutory powers to proceed with its £881,000 development scheme, is in a different position, however. The company is bound to submit a Bill for the purposes of its scheme, and a clause to cover the question of tolls will probably be inserted.

The Port of New York.

Latest Data issued by the Bureau of Commerce.

Appropriations for Harbour Improvements.

IMPROVEMENT of harbour channels in the United States is a Federal function, dependent upon the authority and appropriation of Congress. The Seventy-first Congress passed a Rivers and Harbours Bill last June authorizing projects aggregating \$110,000,000 for the United States as a whole. Of this amount, \$3,115,000, or less than three per cent., represents authorized projects in the Port of New York. Eighty per cent. of the people sailing abroad from Atlantic and Gulf ports travel on steamers sailing to and from the Port of New York. Forty-two per cent. of the country's foreign trade is handled over these waters. It is highly important that such a large part of the national life and property be safeguarded by providing adequate channels and anchorages for the vessels plying to and from this port.

The joint report of the United States Corps of Engineers, and United States Shipping Board, issued in 1926 as Port Series, part 20, says:—

"The development of New York as the principal passenger terminus of overseas steamship lines has resulted in a legitimate demand for greater depths than are generally found necessary for ocean freight traffic. The largest liners in the world now run regularly to the port. Some of them have drafts up to 41-ft., and there are many combination passenger and freight liners drawing 30-ft. or more. Originally the channels of the harbour were wholly inadequate for such vessels. The importance of the Federal Government's work in improving these channels can hardly be over-estimated when considering the factors contributing to the development of shipping."

The Congressional Rivers and Harbours Bills of recent years have merely given authorization for channel improvements, the actual appropriations being included in the annual Army Appropriation Bill which has aggregated \$50,000,000 a year, last year reaching \$55,000,000. No part of this year's appropriations will be used in carrying out projects for the Port of New York authorized in the last Rivers and Harbours Bill. All must be used in carrying on towards completion previously authorized projects. It is important that every effort be made to see that a sufficient sum of money is authorized in the future Army Appropriation Bills to carry forward the projects which Congress has authorized, and to secure such an allotment of funds by the War Department as will permit the completion of the projects in New York Harbour, so essential to the nation at large as well as to the port itself.

Harbour projects are often evaluated on a formula used by the Corps of Engineers which calculates 4 per cent. interest on the cost of construction to date, plus the maintenance charges for the current fiscal year, divided by the net tonnage handled over the channels. Applying this formula to the expenditures reported for the fiscal year ending June 30th, 1929, and to the tonnage statistics reported for the calendar year 1928, as reported by the Chief of Engineers, it is evident that channel maintenance in the Port of New York is the least expensive to the Federal Government on a per ton basis of any of the principal ports of the Atlantic and Gulf seaboard.

	Total Cost of new work to June 30, 1929.	Interest at 4% and maintenance Fiscal Year.	*Water Borne Commerce Short Tons.	Annual Cost per ton.
Savannah, Ga. ...	10,741,652	905,712	2,308,615	0.3923
Charleston, S.C. ...	6,721,688	315,360	2,782,596	0.1133
Philadelphia, Pa. ...	28,050,625	2,940,299	28,363,027	0.1037
†New Orleans, La. ...	22,419,242	1,388,971	17,107,964	0.0810
Baltimore, Md. ...	9,551,713	708,016	17,013,820	0.0416
Norfolk and Newport News, Va. ...	10,789,878	823,166	23,182,370	0.0355
Boston, Mass. ...	12,252,786	518,711	17,266,162	0.0331
New York, N.Y. ...	56,827,673	3,219,347	128,030,959	0.0251

\*Calendar year, 1928.

†South-west and South Passes of Mississippi River only.

While the Federal Government expends more at the Port of New York than at any other single port in dollars and cents, the return in tonnage accommodated is so great at the Port of New York that there is no more economical expenditure for harbour improvement on the entire seaboard.

Value of Foreign Commerce at the Port of New York.

The value of imports and exports at the Port of New York during August was \$196,807,000 compared with \$336,060,000 in August, 1929. This decline of 41 per cent. is characteristic of the trend of the foreign trade of the whole country.

Imports were \$99,085,000 and exports \$97,722,000, a falling off of 41 per cent. and 42 per cent. respectively as compared with August of last year.

Grain Exports.

Exports of domestic and Canadian grain at the Port of New York during the month of July, 1930, were 5,147,000 bushels, being a decline of 1,646,000 bushels or 24 per cent. as compared to the exports for the same month last year, amounting to 6,793,000 bushels.

This decline is due mainly to a drop in exports of Canadian grain during the month, which were 4,310,000 bushels as against 5,803,000 bushels in July, 1929, a difference of 26 per cent.

Domestic grain exports were 837,000 bushels as compared to 990,000 bushels in July, 1929, a decline of 153,000 bushels, or 16 per cent.

In exports of both domestic and Canadian grain the decline was confined entirely to barley, corn, oats and rye, while wheat showed an advance of 14 per cent., the gain being practically all in domestic wheat.

	1930	July	1929	Net Change
Through the Port of New York:—	Bushels.	Bushels.	Bushels.	Amount Per cent.
Domestic and Canadian Grain	5,147,000	6,793,000	—1,646,000	—24.3
Domestic Grain	837,000	990,000	—153,000	—15.5
Canadian Grain	4,310,000	5,803,000	—1,493,000	—25.7

Commerce at Port Newark.

The volume of lumber received at Port Newark by vessel during the month of September, 1930, reflected the general depression in building operations, showing a decline of 47.6 per cent. compared to the receipts of the corresponding month last year. The amount of lumber received was 14,335,000 board feet, while the receipts during the same month last year was 27,339,000 board feet.

Receipts of cargo other than lumber showed a marked increase over that of last year, being 15,381 tons as compared to 4,347 tons during September, 1929.

All of the above cargo was delivered in 49 steamers, lighters, and barges.

Domestic Commerce at Port of New York.

A recent report issued by the United States Shipping Board showing tonnages in intercoastal and coastwise trades at United States ports during the calendar year 1929 shows New York as the premier port in domestic commerce as well as foreign trade. The intercoastal commerce of the whole country during the calendar year 1929 amounted to 10,551,195 tons, of which 39 per cent., or 4,156,688 tons were handled at the Port of New York. The tonnage at all ports on the Atlantic Coast amounted to 9,498,021 tons, of which 44 per cent. was loaded or discharged at New York. New York handled almost four times as much as all the Gulf ports combined. Comparison between the tonnages of 1929 and 1928 shows that the intercoastal commerce at New York increased 14 per cent. against 13 per cent. for the country as a whole.

In the coastwise trade, that is, commerce between ports in the United States which does not pass through the Panama Canal, this port led during the calendar year 1929 with 33,933,947 tons, which equals 32 per cent. of that of all ports on the Atlantic coast, and 17 per cent. of the aggregate of all ports in the country. As in the intercoastal trade, New York is increasing her coastwise trade more rapidly than is the country as a whole. The gain at this port in 1929 over that of 1928 being 9 per cent. The gain of all ports on the Atlantic coast was 8 per cent., Gulf coast 2 per cent., and the country as a whole 2 per cent. Coastwise trade on the Pacific coast decreased 0.6 per cent.

Service at the Port of New York.

Some idea of the excellent service afforded by the Port of New York can be gained from the recent announcement of the Grace Line of increased tourist travel from Europe to the west coast of South America because of the fast schedules maintained between New York and South America. The running time of the fastest direct lines from Europe to the west coast of South America is cut in half when trans-shipment is effected at New York. The time from Liverpool to either Panama or Callao was 10 days less via New York than via direct steamer, and from Europe to Valparaiso 11 days less.

Steamship service at New York is not confined to speed, but embraces special ventilation and refrigeration for articles of the most perishable nature. For example, when the steamship "Eastern Prince" arrived in New York on September 16th she brought the first importation of pancreas from the Buenos Aires packing plant of Armour and Company. From



# The Port of New York—continued.

these glands the insulin used in treating diabetes is obtained. They are so highly perishable that no attempt has ever been made to import them before. This initial shipment was frozen and kept at a temperature of 5 degrees below zero while on shipboard.

The importation of Holland bulbs also required large steamers with light and airy holds, as adequate ventilation is one of the primary requisites. It is expected that the season will see an importation of about 360,000,000 Holland bulbs valued at \$5,000,000. This shows an increase over 1929, although the tariff on bulbs was increased during July. More than 85 per cent. of this entire supply is shipped to New York, the remainder being split up between the ports of Boston, Philadelphia, and Baltimore.

The American and Cuban Steamship Line has added the ports of Tarafa, Nuevitas, and Pastelillo to the Cuban ports at which their steamers call. This new service began with the sailing of the s.s. "Pinar Del Rio" on October 30th, 1930, and will continue every two weeks thereafter.

## State Barge Canal.

Wheat carried on the New York Barge Canal to date this year exceeds the total of all grains moved over the waterway in 1929, according to the Commissioner of Canals and Waterways. The total wheat movement up to September 27th was 830,502 tons as compared with 573,771 tons of all grains carried during a similar period in 1929.

Each season some new item of traffic appears on the Barge Canal. Recently two boat loads of canned soup moved over the New York State Barge Canal from Camden, N.J., to Chicago, Ill. It is understood that the initial two loads of 3,600 tons is the forerunner of a continuous movement of this traffic.

## Steamship Passenger Traffic via Port of New York.

The number of steamship passengers that travelled to and from foreign lands via this port during the month of August exceeded that of any month this year or last. In fact, the August total of 185,443 passengers was 78,000 greater than any previous month of 1930 and 24,000 more than that of August, 1929, the peak month of last year.

Traffic for the first eight months of the year now totals 726,181 passengers, compared with 708,425 passengers carried during the same period in 1929, representing a gain of almost 18,000 travellers.

The following table indicates that, although there were 3,000 fewer immigrants admitted in August than a year ago, the number of U.S. Citizens and Non-Emigrant Aliens increased 27,000 during the same period.

Inbound.	August, 1930.	August, 1929.
Aliens, Immigrant ...	9,052	12,141
Aliens, Non-Immigrant ...	13,752	13,618
U.S. Citizens ...	61,324	54,162
Total ...	84,128	79,921

Outbound.	August, 1930.	August, 1929.
Aliens, Emigrant ...	3,620	3,758
Aliens, Non-Emigrant ...	22,319	17,296
U.S. Citizens ...	75,376	60,634
Total ...	101,315	81,688
Inbound and Outbound Total	185,443	161,609
First 8 months Total ...	726,181	708,425

The maintenance of overseas passenger trade through the Port of New York is particularly gratifying in these times of general depression. The Transatlantic Steamship Conference reports for the period between January 1st and October 17th a decline of 2,945 passengers from all U.S. Ports, and of 17,686 from Canadian ports. The losses have been heaviest in the first and second cabins, tourist third registering heavy increases.

## Vessel Movements in Foreign Trade.

The number of vessels entered and cleared in foreign trade at the Port of New York during September, 1930, was slightly less than a year ago. There was a decline of 23 clearances and a gain of 1 entrance, as compared with the corresponding month last year. The aggregate net tonnage of the vessels exceeded that of the same period last year.

	September	September
	1930	1929
Entrances ...	Number of Vessels. 591 Vessel Tonnage. 2,877,309	Number of Vessels. 590 Vessel Tonnage. 2,692,197
Clearances ...	555 2,691,523	578 2,589,892

## Steamship Sailings.

The total number of steamships sailing from the Port of New York during the month of September was slightly under that of a year ago. Coastal sailings increased somewhat, but this was more than offset by the drop in the foreign and intercoastal trades.

In the foreign classification, three of the major European routes—United Kingdom, Baltic and Rotterdam-Antwerp—registered more sailings than September, 1929, but nearly all the other foreign routes fell off, particularly the Caribbean-Mexican, South America (East Coast) and Australian. Direct sailings to the Pacific Coast dropped more than 20 per cent. and the number of intercoastal tankers was almost halved.

However, coastal tankers and coal carriers continue to register increases, and the combined sailings of these two types now exceeds that of general cargo carriers.

On Saturday, September 6th, which was the peak day of the month, 101 vessels sailed from this port. Foreign sailings accounted for 54 vessels, and of these 10 went to the United Kingdom, 10 to North Europe, 13 to Caribbean-Mexican ports, and 5 were tankers. The 47 domestic sailings included 10 to Atlantic and Gulf ports, 3 to the Pacific Coast, 5 tankers, and 3 coal carriers.

## Modern Methods of Transport. Need for Better Harbour Facilities.

Mr. Joseph Mallagh, B.A., B.E., Engineer to the Dublin Port and Docks Board, in his presidential address to the Institution of Civil Engineers of Ireland, held at 35, Dawson Street, Dublin, dealt with the rapid development of marine and land transport, and also referred to the report of the Free State Ports and Harbours Tribunal.

The session on which the Institution was entering, he said, held large and important developments for the profession, and it might see the culmination of the efforts which the Council had made for many years to obtain a legal status for engineers. In recent years the most striking developments in engineering had been in methods of transport. As far as marine engineering was concerned, new ideas were producing ever-increased efficiency.

All efforts to design faster and better ships, however, would be wasted unless the Harbour Engineer could provide proper accommodation and facilities for rapid clearance. It was apparent that any failure to provide proper facilities at the Port of Dublin must involve loss to the whole country. Of equal importance to the sea approaches were the land approaches, and the provision of good and wide roads in the port area was necessary. With the steadily increasing traffic on the roads there seemed to be a distinct need for the fuller utilisation of inland waterway transport which of late had been somewhat neglected in this country.

Another provision that would soon have to be made in connection with every seaport of importance was the installation and maintenance of an air port.

Referring to the Report of the Ports and Harbours Tribunal, which he described as an invaluable work, Mr. Mallagh

refrained from commenting on the general recommendations, but remarked that the recommendation that for certain harbours controlled by Commissioners engineering advice should be supplied by the State (Board of Works) was extremely objectionable. The assumption underlying that recommendation seemed to be based on the idea that the consulting engineers had charged unreasonable fees for their services. That assumption was unfounded. The Institution had adopted a scale of charges which compared favourably with the fees of other professional men and which had the unofficial approval of at least one Government department.

As to harbours to be placed in control of County Councils, the idea in some Government circles that County Surveyors should undertake all engineering work within their spheres, had spread to the Tribunal. Most surveyors would agree that these harbours required the skill and experience of a specialist in marine engineering.

The recommendation referring to the preservation of engineering records, and regarding absence of any State provision for the surveying of harbours and coasts and the preparation of charts, had the warmest approval of the Institution.

Referring to the suggested establishment of a free port at Dublin, Mr. Mallagh said that the existence of a free port did not imply interference with the normal trade and working of an existing port. The underlying principle had, in effect, lent itself abroad to the development of local trade and the creation of consignment markets. A suitable area for such an enterprise existed on the North side of the Liffey, and it was hoped that they would see there the solution of some of the many problems encountered in dock and harbour engineering.



## Irish Harbour Matters.

### Recommendations of Ports and Harbours Tribunal.

THE Irish Free State Ports and Harbours Tribunal has issued a report of nearly 500 pages dealing with the historical, administrative, financial and commercial aspects of the ports and harbours of the Irish Free State. The Tribunal consisted of Mr. H. B. O'Hanlon, Solicitor, chairman, with Messrs. C. H. O'Connor and Michael Deegan. Twenty-seven sittings were held and 223 witnesses, representing all the interests concerned, gave evidence.

Among the recommendations of the Tribunal, briefly summarised, are:—

The reduction of the maximum penalty of £10 for the offence of removing sand or shingle from the foreshore.

Extension of the period (six months) within which pilotage dues may be recovered.

The passing of a Bill consolidating the various general Acts relating to harbours, excepting the Pilotage Act, 1913. The General Consolidated Act should provide for the making or confirmation by the Minister for Industry and Commerce of by-laws or orders relating to purely local administration and importance, such as the borrowing of money, regulation of rates, etc.

That the following ports be classed A and B, as follows:—

Class A.—Dublin (including Balbriggan and Sturries), Cork, Limerick, Waterford.

Class B.—Annagasson, Arklow, Ballyshannon, Baltimore and Skibbereen, Dingle, Drogheda, Dundalk, Foynes, Galway, Killybegs, Kilrush (Cappa Pier), Kinsale, Moy River (Ballina), New Ross, Sligo, Tralee and Fenit, Westport, Wexford, Wicklow, Youghal.

That Galway be included in Class A in the event of its being developed and becoming a port with a regular trans-Atlantic trade.

It is recommended that the Boards at the Class A ports be composed of 15 members made up as follows:—Elected by the City Corporation (not necessarily from its own body), 5; elected by the members of the Chamber of Commerce at a meeting specially held for the purpose, 4; elected by persons paying tonnage rates on vessels of £20 and upwards, 2; nominated by Minister for Industry and Commerce, 4.

As to Class B ports, it is recommended that the Boards be composed of eleven members where a Chamber of Commerce exists or is subsequently established, and nine where no Chamber exists, as follows:—Elected by Urban District Council, or County Council, 4; elected by Chamber of Commerce, 2; elected by persons paying tonnage rates on vessels of £10 and upwards in the last financial year, 2; nominated by Ministry of Industry and Commerce, 3.

The tenure of office for both classes of Harbour Commissioners shall be for three-year periods, and they shall retire in a body.

At each of the Class A ports, control of administration should be in the hands of a general manager who should also act as secretary.

It is recommended that all proposals of harbour authorities for borrowing money be subject to the approval of the Department of Industry and Commerce, and that the procedure for obtaining loans be similar to that followed in the case of local authorities.

Harbour authorities should have power to conclude agreements for compounding rates subject to the sanction of the Ministry, and should enforce additional rates on vessels lying at any berth beyond a certain specified period.

### State Aid.

The Tribunal recommends that State aid should be available for harbour undertakings of national importance which cannot be financed from local sources; and that State funds should also be provided for approved schemes of local importance where the harbour authority cannot raise the money, subject to contributions from the local authority served by the port. Local authorities should be authorised to assist harbour undertakings. So far as possible, State aid should be by way of direct loan or by State guarantee of loans raised by harbour authorities themselves.

Harbour authorities, the report goes on, should be exempt from local rates and should be responsible only for the actual quays.

Statutory provision should be made to enable harbour authorities to acquire compulsorily any privately-owned quay or wharf within their jurisdiction.

### Modern Plant and Registered Workers.

Another recommendation of the Tribunal is that harbour authorities should instal such modern plant as will enable them to handle goods economically and expeditiously; and that

steps be taken for the decasualisation of dock labour by a system of registration which would permit the employment of only registered workers.

The Tribunal suggests that harbour authorities on routes likely to be developed for aerial transport should ascertain probable cost of providing suitable landing and other facilities for seaplanes. Where such facilities can be provided at a reasonable cost, the Tribunal advises the creation of an Air Port.

### Dublin Port.

With regard to Dublin, the Tribunal is of opinion that the Port and Docks Board should consider the question of providing storage and warehousing accommodation closer to the shipping than that available in the Custom House Docks. The cost of improving the port raised the outstanding liabilities of the authority from £814,041 in 1908 to £1,149,761 in 1926, but proper provision has been made to redeem all loans as they mature.

Between 1909 and 1928 surplus on the working of the port increased from £5,006 to £55,959, or a net surplus of £202,000.

The extension of sheds at North Wall Extension is regarded as worthy of serious consideration. There is said to be room for improvement in cattle lairages.

Then follows a series of recommendations concerning the other ports inspected.

### Dublin's Increased Tonnage.

At a meeting of the Dublin Port and Docks Board, Mr. Bailey, Secretary, reported that there was an increase on tonnage entering the port for the nine months ended September, 1930, compared with the same period last year. The figures were:—Cross-Channel and coastwise, 1,332,900 tons, as compared with 1,289,762 tons in 1929; foreign ports, 459,802 tons, as compared with 430,810 tons in 1929. The total tonnage up to September, 1930, was therefore 1,792,702, as against 1,720,572 for the same period in 1929, an increase of 72,220 tons.

### Rushbrooke Dockyard.

Every effort is being made locally to secure such ship repairs as will keep the Rushbrooke dockyard, Cork, open. Sir Samuel Kelly, a noted Belfast shipowner, has offered to get some of his ships repaired in Cork. If other firms follow his example the work of repairing ships may remain in Cork. In reply to a Committee of the Cork Harbour Board, which met them in regard to the rumoured closing of Rushbrooke dockyard, representatives of Messrs. Beardmore and Co., Ltd., London, said they were losing £10,000 a year.

### Belfast Shipbuilding.

During the ten months ending October last, 24 vessels of approximately 153,000 tons were launched, compared with 15 vessels of 115,000 tons for the corresponding period last year. Fourteen vessels were launched this year by Messrs. Harland, Ltd., and ten by Messrs. Workman, Clark (1929), Ltd. The largest vessel under construction in Belfast at present is the duplicate of the White Star liner "Britannic," which Messrs. Harland and Woolf are building. It is a vessel of approximately 27,000 tons.

### The Rhine-Main-Danube Canal.

The canalisation work of the Main has now been completed as far as Miltenberg. The boat lock near Kleinheubach just below Miltenberg started working on the 15th November, 1930. This will now enable boats and barges up to 1,200 metric tons to ply up and down the Rhine and Main as far as Miltenberg. The navigation of the Main as far as Miltenberg is only a fraction of the whole project. The object is to carry out a through traffic from the Rhine to the Danube for boats and barges up to 1,200 tons. The work of damming the huge masses of water of the Main has so far been only partially possible. While the Main is being canalised for shipping the water power of the Main is to be used for the production of electrical power. Two large power stations are already in use. Other power generator stations are being built. These stations, working in conjunction with the Bavarian water power stations, have succeeded in finding consumers of their electric power. According to present plans it is hoped that in 1935, or thereabouts, the navigation of the Main may be carried up as far as Würzburg. The final project provides for a further canalisation of the Main to Bemberg, and for a branch from there over the Jura to the Danube. Till now boats up to 1,200 tons can go up as far as Oberrhein, the first lock above Aschaffenburg.

## Alarm at the Humber Bridge Proposals.

THE possible effects of the proposed bridge across the Humber in the vicinity of Hull upon the navigable channel of the river, and more particularly the access to the ports of Hull and Goole, continue to be the main centre of interest. It is not too much to say that the proposals are being hotly debated by the various bodies interested, and that a substantial volume of opposition is threatened to the Bill which the Hull Corporation are promoting in the present session of Parliament. The latest and probably the most important development has taken place in connection with the Humber Conservancy Board, which body is specially charged with the care of the river or estuary, and naturally looks with a jealous eye upon anything that is in the least way likely to be a source of danger. The project has been under consideration by a special Committee who have consulted an expert authority. And at the most recent meeting of this Committee it was reported that a letter had been received from Mr. H. A. Reed, the Board's Consulting Engineer, stating that as a preliminary to the full report he will make to the Board, his views upon the bridge proposal "are distinctly against it, both as regards the possible influence of the piers on the regime of the river, and also as regards the obstruction the bridge will offer to navigation."

The Special Committee thereupon passed a resolution which has since been approved by the full Board, "that, in view of the investigations which have been made by this Committee on the subject, opposition be entered by the Board against the Bill embodying the proposal if and when it is presented to Parliament." The Committee also decided that they were now in a position to meet the Special Committee of the Hull Corporation as that body desired.

An indication of the strong objection to the project entertained by the shipping trade is furnished by the remarks of Mr. Minnitt Good, who is chairman of the Shipping Committee of the Hull Chamber of Commerce and Shipping, and who has been made a member of the Special Committee of the Conservancy Board. At the meeting of the latter, Mr. Good recalled that at the end of 1925, when the Aire and Calder Navigation promoted a Bill for making the training walls (known as the "fish tail") at the confluence of the Rivers Ouse and Trent, where they meet and form the Humber estuary. Very strong objection was taken to it on the ground that it might possibly endanger the navigable channel. If there was at that time any danger, said Mr. Good, those who were versed in the alterations in the channel of the river knew how much greater danger was involved in the bridge proposal, but the general public did not know so much. Anyone who considered the reports would realise that there was no more unstable river in the world than the Humber, and that any artificial work in it might seriously endanger not only the channel of the upper river, but also the deep-water channel past Hull. At a previous meeting Sir George Moody had referred to the possibility of it closing up New Holland, but no one could say what was the possibility with regard to Hull. When the plans were drawn the north pier of the central span of the bridge was shown to be outside the channel; to-day it is within the channel. If such a change were possible without any locations being placed in the river, what, he asked, were the possibilities if they got in it an erection one hundred feet wide for twelve months? It was definitely stated in the report of Sir Douglas Fox and Partners, the engineers for the Bridge, that whilst they were putting in the piers the channels would be shortened by 50-ft. That meant that whilst the 50-ft. piers were being built, there would have to be another erection of 50-ft. Could anyone with any knowledge of the enormous amount of silt coming down anticipate it was possible for such works to be done without serious danger to the channel? Many people asked why talk about opposing a Bill they had not yet seen? But they had seen what was the more important—the proposal of Sir Douglas Fox and Partners, which must cause everyone connected with the Humber to realise the great danger to which both Hull and Goole were exposed.

Not only at Hull, but at Goole, the port of the West Riding, as it is known because of its geographical situation sixty miles from the open sea, a note of alarm has been sounded. The Aire and Calder Navigation is the port authority and has, with the London, Midland and Scottish Railway, very considerable interests there. The Navigation is one of the principal opponents of the Hull Bill, and the chairman and managing director, Sir John Eaglesome, has in a letter to the Goole Chamber of Commerce outlined the main objections to the project. He likens the number of piers of the proposed bridge to as many rocks placed in the bed of the river. No one with an engineering and nautical knowledge, he writes, can fail to see the danger of such numerous obstructions, especially having regard to the high velocity of both the flood and ebb tide currents (which are from four to seven miles

per hour), or the damaging effect of the piers in forming sandbanks above and below them and the consequent disturbance of the channels of the river above and below the bridge. The project, Sir John says, is similar to that promoted by the Hull and Lincoln Railway Company in 1883—a project which was successfully opposed by the Aire and Calder Navigation, the Humber Conservancy Board, and other bodies. Comparing to-day with the conditions in 1883, a very much larger type of vessel, carrying greatly increased tonnage, now navigates the Upper Humber and Lower Ouse to the port of Goole.

It is interesting to add that the Aire and Calder Navigation is one of the oldest port authorities in the United Kingdom; it has served the cities of the West Riding for 232 years. It controls the inland canal system radiating from the port of Goole and to date has spent £418,000 on improvements of the Ouse, and further works in hand are estimated to cost another £54,000. Moreover the Navigation has expended on improvements at Goole a sum of £817,973 and works are now in progress estimated to cost a further £265,365.

In the view of Sir John Eaglesome it is essential for the prosperity of the port and town and the cities and towns of the West Riding that nothing should be done to obstruct the navigation of the river Humber or limit the burthen of the vessels which can or may trade at Goole in the future. It is emphasised that the Aire and Calder Navigation, as Dock Authority for the port of Goole, is not opposing the construction of a road bridge across the river Humber on the ground of competitive traffic, but on the vital principle of interference with and obstruction to navigation and to the river approach of the port. The construction of the bridge, Sir John asserts, would result in small advantage to the city of Hull as against the great disadvantage which the cities and towns of the West Riding would suffer by having their alternative outlet for traffic seriously jeopardised.

The treacherous nature of the river Humber was alluded to by Alderman M. Robertson-Brown at a meeting of the East Riding County Council. He said that he had sailed the Humber thousands of times; in his earlier days he had almost lived on it. He knew it and its tributaries from one end to the other, and he had not the slightest hesitation in saying that the bridge proposal should be decided on engineering grounds alone. The changes of the sands and banks were great; he had seen steamers wrecked on banks that were not in existence four tides before. The tides ran at from four to seven knots per hour and there were few people, he averred, unless they were experts, who had the slightest conception of what would happen if the piers and buttresses were placed in the river.

Alderman Brown said that he was certain that the scheme would go to pieces, because it was not feasible that Parliament would run the risk of closing the port of Goole and of destroying all commerce above Hull.

At the same meeting it was decided by 39 votes to 29 not to send representatives to the Conference called by the Minister of Transport and which was held in London on November 26th. The Conference, which was presided over by Lord Ponsonby, had been summoned to discuss the various questions raised with regard to the possible effects of the bridge on the navigation of the Humber. Among the bodies to which invitations were also sent were the Hull City Council, the Lindsey (Lincolnshire) County Council, the Humber Conservancy Board, the Aire and Calder Navigation, and the Goole Urban Council. It was expected that the Board of Trade would also be represented.

Notwithstanding pressure from the Ministry of Transport, the East Riding County Council still decline to have anything whatever to do with the project. The Minister had expressed regret at the attitude adopted by the Council, and the Clerk had replied that the Council resented the suggestion that by adopting a line of policy which in their opinion was a wise and prudent one they were "adopting a policy entirely at variance with the first principles of local government." At the November meeting of the Council Mr. E. C. S. Stow proposed to move an amendment that the Council contribute a sum not exceeding £50,000 towards the cost of the proposed bridge; but this was ruled out of order, the Chairman (Lord Devamore) pointing out that the Council had dealt with the subject in April last and again in July. Colonel Saltmarsh asked if attendance at the Conference called by the Minister of Transport would prejudice the Council's position, and did it suggest that they might possibly contribute afterwards—to which the Clerk replied in the negative. Mr. J. Byass, one of the former representatives, however, regarded the invitation as an attempt to get the Council into the scheme and to drag £50,000 out of them. Hull, he said, had got hold of the Minister of Transport and was trying to force the Council's hands. The bridge would not be in the interest of an agricultural district like the East Riding, he added.